THE NEW YORK

JOURNAL OF MEDICINE.

FOR SEPTEMBER, 1844.

PART FIRST.

Original Communications.

ART. I.—*A Dissertation on the Protective Powers of Vaccinia; being the Essay to which was unanimously awarded the Prize of the Boylston Medical Committee of Harvard University for* 1844. *By the* EDITOR.*

"TO WHAT EXTENT IS THE HUMAN SYSTEM PROTECTED FROM SMALL-POX BY INOCULATION WITH THE COW-POX?

"IS THE PROTECTION INCREASED BY RE-VACCINATION, AND IF SO, UNDER WHAT CIRCUMSTANCES?"

THE first branch of this inquiry—*To what extent is the human system protected from small-pox by inoculation with the cow-pox*—though not admitting, in the present state of our knowledge, of an *absolute* and *unconditional* answer, yet is susceptible of a *comparative* one, which, as regards all practical ends, may be considered as equally definite. As respects the "extent" of protecting power afforded by vaccination against small-pox, the answer of the writer is, *that when perfect, it is as complete a protection as any other prophylactic known to man.* It is a general law that an individual is insusceptible of a second attack of small-pox, and yet cases of recurrent variola are so common, at the present day, as not even to excite our surprise: It is not, however, the less a general law, which, like all other vital laws, is subject to exception. On the other hand, variola after vaccination does also occur; but as this does not happen, when vaccination is properly performed, more frequently than the occurrence of small-pox after small-pox, it follows that the general law is

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* According to a standing rule of the Committee, the following is required:

"That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which the premiums may be adjudged.

"That in case of the publication of a successful dissertation, the author be considered as bound to print the above vote, in connection therewith."

equally active in both cases. Upon this point, however, hangs the whole question; for, if it can be proved, as it doubtless will be in the sequel of this essay, that the occurrence of small-pox after vaccination is not more apt to take place than after variolation, the conclusion that vaccinia secures as complete a protection against variola as any other prophylactic agent known to man, is a legitimate deduction. Perfect vaccination may, therefore, be considered as equivalent to an attack of small-pox, and vaccinia be regarded as identical with variola, save the greater mildness resulting from its transmission through the cow.

To have a fair comprehension of this important question in its wide relations, it is requisite to view it upon the broad principles of the philosophy of epidemics; but of the causes of their evolution, no more is known than of the periodical paroxysms of an intermittent fever. A principle of periodicity, both in the diseases and the functions of the body, is observed; and the prescribed cycles of changes that we thus discover, are also revealed in the diseases of nations. Following laws of their own, they remain nearly stationary, for months, years, and, as we learn from medical records, even for centuries; then they again arise, suddenly and unaccountably, shedding, like a mist from the earth, desolation over nations—to disappear once more with the same rapidity and mystery, which characterized their advent. But, notwithstanding the latency of epidemic causes, we may determine by observation, the mode of operation and the laws of action peculiar to epidemics, as well as the circumstances which attend their rise, and which exert over them a controlling influence. Small-pox, for example, is admitted, on all hands, to be contagious; but this principle alone does not explain the rapid propagation of the disease when epidemic. The disease is always contagious, and in this city (New York) it always exists, yet it is only under certain inappreciable circumstances that it spreads. In London, for instance, *five* die weekly when the disease is not epidemic. Suddenly it will become epidemic from some cause to us unknown; and, in its progress over the kingdom, notwithstanding the greatest irregularities apparently, certain general laws are obvious. The five weekly deaths gradually rise, in London, to 10, 15, 20, and so on to 100; here the rate of increase may remain stationary, as though it were the summit of a curve described by a projectile; and then the decline of the disease is marked by the same regularity of decrease down to the five weekly deaths. This same law has been determined throughout England, by means of the annual Registration of births, deaths, and marriages.

We are told by Humboldt that, in 1520, variola was introduced into Mexico by a negro, the slave of Narvaez; and here again it is seen that the propagation of this disease is not dependent on contagion alone. From this period, it exercised its ravages throughout that extensive region, at regular intervals of 17 or 18 years; and notwithstanding European vessels frequently introduced the virus anew subsequently, it never became epidemic, except at these very marked intervals of time. And here may be mentioned the additional and highly interesting fact, that in 1802, during the prevalence of a violent variolous epidemic, it was accidentally discovered that the prophylactic virtues of the vaccine virus had been long previously known in the Peruvian Andes. According to Humboldt, a negro slave had been inoculated in the house of the Marquis of Valumbroso; but, as the specific effects did not follow, the operation was being repeated, when the man declared that he was sure that he

should never have the small-pox, because in milking the cows, he had contracted a cutaneous disease, which, according to the old Indian herdsmen, was caused by contact with certain pustules sometimes found on the dugs of cows Those having had this eruption, said the negro, never take the small-pox. (*Essai Politique sur le Royaume de la Nouvelle-Espagne.*)

The Chinese affect to trace the origin of the small-pox back to a period of more than 3000 years; but the records of this people partake quite too much of the apocryphal character to admit them as substantial data for scientific argument. But as this point is irrelevant to our present inquiry, let us refer to the inoculation of small-pox among this same people, which will throw some light upon the question at issue.

"Inoculation," says William Hamilton, Esq.,* "as a prophylactic against the natural invasion of this complaint, is also said to have been practised in China long before its introduction into Europe; and a fact of considerable importance is connected with this, which merits the more attention from being recorded in a work published many years before Dr. Jenner's discovery of the prophylactic powers of the vaccine virus, and consequently free from all suspicion of being partially related for the purpose of favoring one or the other of the parties into which both the professors of medicine, and the world in general, have been divided with respect to its efficiency in fortifying the system against the invasion of variolous contagion. The fact, as stated in Grosier's own words, is this, that the Chinese place '*less confidence* in the practice of inoculation than the Europeans, and for this reason, because the former are convinced by *numberless* instances, that it does *not* prevent a *return* of the small-pox when it becomes epidemical.' "†

Than this fact there is perhaps no other, either in the ancient or modern history of medicine, more curious. Up to the time of the controversy respecting the prophylactic powers both of vaccine and variolous virus, which directed the attention of European practitioners expressly to the subject, this important truth appears to have wholly escaped their observation; and in the attempt to prove that the human system cannot be rendered, by means of the cow-pox, insusceptible of the variolous poison, they learned a most important fact in addition to being convinced of the truth of what had already been taught them by the experience of the Chinese. They now ascertained conclusively not only that variolous inoculation is insufficient for securing a person from any possible subsequent attack; but, what is still more important, that an individual, even when the disease is communicated naturally, has not secured to him an exemption from a recurrence.

The identity of variola and vaccinia will be still further established in the sequel by reference to direct experiments; but it may be well previously to advert to some general views. That small-pox, measles, scarlatina, glanders, hydrophobia, syphilis, etc., are evidently produced by certain matters, which have not yet been analysed, few are, at this time, disposed to deny; and as these specific matters propagate diseases, either by inoculation and contact (contagion), or by inhalation (infection), it has been, with much propriety, suggested that, for the purpose of reasoning,

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* The History of Medicine, Surgery, and Anatomy, from the Creation of the World to the Commencement of the nineteenth Century. By William Hamilton, M.B.

† Grosier, c. i., p. 489.

these poisons, or exciters of well-defined diseases, ought to be specifically designated. Thus the specific matter of small-pox has been termed *varioline*, of cow-pox, *vaccinine*, of measles, *rubeoline*, of hydrophobia, *lyssine*, of syphilis, *syphiline*, of glanders, *equinine*, of cholera, *cholerine*, of hooping cough, *pertussine*, of influenza, *influenzine*, etc. These diseases, contrary to those referred to external causes alone, may, in the cycle of external circumstances through which the human body passes, be developed spontaneously; but, notwithstanding this spontaneous origin of variola, syphilis, etc., which it is impossible always to trace to infectious sources, and for the existence of which in the world, it is impossible to account for on any other principle, these various diseases, when once developed, whether spontaneously or by contagion, possess the important characteristic of communicating their action, and thus causing the same transformations in other bodies. This property of the specific poison has been designated *zymotic*, which is derived from *Ζυμοω, I ferment*. This, however, is not to be understood in the chemical sense of fermentation, but merely as a general designation of the morbid process of these exciters.

Upon this zymotic hypothesis, the researches of modern chemistry, and especially by Liebig in his investigations of organic transformations, have thrown considerable light; but Liebig, in his disregard of the agency of the vital principle, has carried his theory quite too far. "Sausages," he says, in the state here described [a putrid state], "exercise an action upon the organism, in consequence of the stomach and other parts, with which they come in contact, not having the power to arrest their decomposition; and entering the blood in some way or other, while still possessing their whole power, they impart their peculiar action to the constituents of the fluid." He thus finally reaches the absurdity of making man a *living cadaver!* He seems, however, in the opinion of his friends, to have opened the way to the explanation of this class of diseases, by a reference to "the phenomena attending the transformations of organic compounds, excited by the action of other compounds simultaneously undergoing analogous transformations."

This, however, is by no means, as Liebig alleges, a new theory, as may be seen most satisfactorily on consulting the English medical classics; for the three great cotemporaries, Sydenham, Morton, and Willis, when the plague and other epidemic diseases were rife, all announced, however much they differed on other points, this zymotic hypothesis as the basis of their pathology. The early medical writers have generally directed attention to the analogies which the diseases here referred to have with putrefaction, fermentation, and poisoning. Morton, in his Pyretologia, calls the morbid principle "*fermentum venenatum*," which, as he alleges, communicates its action like a ferment, from which result perceptible transformation (*mutationes*) in the blood, the secretions, and the tissues. Ebullition and fermentation were used by Sydenham in the same qualified sense, and thus also was the term, which has been translated, *coction*, used by Hippocrates.

But we must here limit our remarks to the morbific principles, *varioine* and *vaccinine*. Among these principles generally, some are fixed and others are volatile, while a third class, to which belongs *varioline*, has both properties; but vaccinine, like syphiline and equinine, is perhaps always fixed. Contagion, however, is not always, even in the instance of varioline and syphiline, the result of their contact; and contagion is,

as regards the contact of some of the zymotic principles, the exception rather than the rule. Some persons, for example, have an insusceptibility even to varioline—an immunity attributable perhaps to the circumstance that the morbific principle producing the specific transformation is overpowered by the vital conservative energies; for it is a law of the animal economy, inseparable from the continuance of life, to repel all deleterious agents, that is, to impart to all organic matters brought within its action, its own conservative movements.

For these views we are indebted to William Farr, Esq., in his letter to the Registrar-General of England, in the annual report for 1842; and enlarged and comprehensive as they are, they serve the useful purpose of freeing the trammelled mind from the narrow misconceptions of preconceived opinions.

"Varioline," says Mr. Farr, "is converted in the cow (as Mr. Ceely has shown) into vaccine, and cow-pox affords an interesting illustration of the modifications which diseases undergo, and which may be imparted to them by changes in their exciters. Vaccinine taken from the cow effects the transformation of the *materies morbi* in man almost as completely as varioline; but it reproduces vaccinine; and in the process is never fatal, never produces the variolous fever, and its vapor is never infectious, like that of varioline. The mild form of small-pox which appears in persons modified by previous vaccination, or which follows small-pox inoculation, is an equally good example of the changes induced in diseases by the actual constitution of the individual, and the mode of infection."

The common origin of variola and varioloid is thus very fully sustained upon general principles, without reference to certain special arguments to be yet adduced; and there is good reason to include, in the same category, varicella. As variola, in its general stages, presents a most marked diversity of pathological changes, as fever, vari, vesiculæ, and pustulæ, it must necessarily be subject to a variety of modifications, depending on an arrestation of development at any one of these periods. Hence we find an arrangement, adopted by Erasmus Wilson, Esq., based on these modifications, under the generic designation of *varicella*, which is the diminutive of variola. "When the mode of origin of these various forms of variolous disease," he says, "is considered, it will not excite your surprise to be informed that the eruption is never uniform in character, but that each variety is more or less intermingled with the rest; so that cases may occur in which the whole of the forms may be present upon the same individual."* It is only by such enlarged views that we can hope to arrive at any generalizations; and there is doubtless some foundation for the opinion that too exclusive attention has hitherto been given to the eruptive stage of the contagious exanthemata, thus withdrawing us from other methods of investigation which might lead to more expanded knowledge. Upon this point, Dr. Holland, in his "*Medical Notes and Reflections*," makes the following judicious remarks:

"It will probably be one of the most certain results of future inquiry to associate together, by the connection of causes of common kind, diseases now regarded as wholly distinct in their nature, and arranged as such in our systems of nosology. This remark applies very widely

* London Lancet, February 11, 1843.

throughout all the genera of diseases; but in no instance so singularly as to some of the disorders of a contagious or epidemic kind; as scarlatina, measles, hooping cough, erysipelas, the infantile fever, dysentery, epidemic catarrh or influenza, etc. Without affirming the *materies morbi* to be the same in any two of these disorders,—presuming it to be different in most of them,—and admitting the diversity of the symptoms,—yet relations there probably are, closer and more peculiar than any which have yet been ascertained, or made the basis of classification. And these are, without doubt, some of the most interesting objects of pathological research."

But to return to the question of the identity of variola and vaccinia. This identity has recently been demonstrated by experiments scientifically conducted, by infecting the cow with variola, and thus producing the vaccine infection. That the two diseases are one and the same, was the opinion of Jenner, who, regarding the vaccine disease as only modified by passing through the system of the cow, consequently named it "*variolæ vaccinæ*." It is here deemed unnecessary to enter into a detailed account of those experiments. It was first successfully accomplished by Dr. Sonderland, of Bremen; and from the accounts which appeared in the German Journals of 1831, his mode consisted in fastening upon the backs of cows the woollen bed-clothes of small-pox patients, who had died with the disorder in its most malignant form. These experiments have been repeated, in different countries, with a similar result; as, for example, by Dr. Griva, chief of the vaccine establishment at Turin; by Dr. Basil Thiele, of Kasan, in South Russia, and by Mr. Ceely, of Aylesbury, England. In Italy the experiment was tried on a large scale in 1829, when the alarm of epidemic small-pox induced the Piedmontese physicians to make trial of a variety of new stocks of lymph; but the result, according to Dr. Griva, was "that no perceptible difference was to be traced between the aspect and progress of the old and the new, the primitive and the long humanized virus." Dr. Thiele, in 1836, succeeded in the inoculation of a cow, by inserting the virus in the posterior part of the udder, where the animal could not lick it; and from the disease thus produced, inoculation of several children was followed by vesicles having all the characters of the genuine vaccinia; but, as is usual in all cases of vaccine lymph taken fresh from the cow, the constitutional symptoms were more than ordinarily severe. Within two years, upward of 3000 individuals were vaccinated with the virus that had come originally from this source.

Equally satisfactory did the series of experiments, instituted by Mr. Ceely, of Aylesbury, England, prove; and these may be found detailed in the Report of the Seventh Anniversary Meeting of the Provincial Medical Association, held at Liverpool, in July, 1839. Having attempted unsuccessfully to affect cows after Dr. Sonderland's method, he finally succeeded, by means of punctures made in the labia pudendi, in inoculating three young heifers. Much difficulty, in fact, attends this experiment, in consequence of the indisposition evinced by one genus of animals to be acted upon by morbid poisons generated in animals of a different genus. Suffice it to add, that the vesicles, in every respect, corresponded with those delineated by Jenner.

Having thus incontrovertibly established the identity of these two diseases, modified only by the peculiarity of animal constitution, thus showing the *rationale* of the protection afforded by vaccinia, we will now pro-

ceed more fully to determine, by actual observation, the "extent" of this protection.

The triumph of vaccination over the dreaded contagion of variola has now been satisfactorily proved by the accumulated experience of nearly half a century. All the obstacles thrown in the way of its triumphal progress by prejudice and ignorance, were finally surmounted; but of late years, as small-pox has shown a tendency to re-assume its formidable ascendency among epidemic disorders, the recurrence of this disease in some who believed themselves guarded against its attack, has unfortunately thrown a doubt over the perfection of its prophylactic powers. But this subject, properly viewed, leads to a very different inference. Even Jenner himself, urged on by the impulsion which animates a discoverer, was too cautious in his deductions, from observing that small-pox itself is no infallible protection against a second attack, to believe that vaccination possesses this power; but this bold assertion was subsequently made by his less judicious followers. Thus it is seen that far too much was expected from its influence by some of the early friends of vaccination. Notwithstanding the vaccinated may possess an immunity, *communibus annis*, experience demonstrates that this prophylactic virtue too often fails in years of epidemic prevalence.

As complete protection depends upon perfect vaccination, it may be well, before proceeding to show its farther advantages, to allude to the causes that may prevent the proper development of the protecting disease in the human system.

A failure, it is said, may arise from vaccinating a child at too early an age, that is, at a period when the system is not yet sufficiently developed to render it liable to the full action of the vaccine poison; but this opinion, if we are allowed to judge of this question by the susceptibility of the infant to variola, is not based upon correct observation. Contrary to what is said by most writers, that the child within the month is almost exempt from an attack, it appears from the Registration of England that, among 8714 persons who died of small-pox in 1839, as many as 202 were within the first month of life. The following table from the Second Annual Report shows the ratios of mortality at all the ages of life of the above 8714 persons, and also the annual rate of mortality at different ages, "calculated upon the assumption that the relative numbers living at the respective ages were the same as in 1821. This is the nearest approximation to the truth that can be obtained, as the ages of the living were not specified in 1831." In the *Annales D'Hygiène Publique et de Médecine Legale*, Tome IX., there is a paper by M. Villermé on Epidemics, in their relations to Medical Statistics, Hygiene, and Political Economy, in which the great probability of there being a direct relation between the mortality of epidemic diseases and the law of mortality according to age, is pointed out. Both results, with the view to exemplify this interesting law, are here presented, as they will again be brought under notice in the sequel.

AGES OF 8714 PERSONS WHO DIED OF SMALL-POX IN 1839.

	MONTHS.						YEARS.				
Age,	0	1	2	3	6	9	0	1	2	3	4
Males and Females,	202	181	162	456	646	588	2235	1524	1197	869	638
Annual Rate of Mortality to 1000 living at each age,							2.73				

	YEARS.									
Age,	5	10	15	20	25	30	35	40	45	50	55
Males and Females,	1122	206	226	240	148	93	75	43	22	13	10
Annual Rate of Mortality to 1000 living to each age,	.54	.12	.14	.16		.09		.04		.02	

	YEARS.								
Age,	60	65	70	75	80	85	90	95	Uncertain.	Total.
Males and Females,	19	10	10	4	10	1	"	1	8	8714
Annual Rate of Mortality to 1000 living at each age,	.03		.04		.01		"	"	"	55

In the preceding year, that is, the latter half of it, we learn that one infant died of small-pox when aged but ten days, and three were but a fortnight old; and to this may be added, that even the fœtus in utero is not exempt from variola, which thus becomes a cause of abortion. These united results at least teach us the important lesson not to delay vaccination, at all events, beyond the third month. This is further confirmed by the early deaths at Bath and Liverpool, as appears by the Registration of the latter half of the year 1838:

	MONTHS.				YEARS.										
Age.	0-2	3-5	6-8	9-11	0	1	2	3	4	5	6	7	8	9	Above 10
Bath,	5	7	12	9	33	31	33	17	17	6	4	"	2	"	10
Liverpool,	17	24	42	50	143	127	77	64	24	19	11	4	2	3	25
Total,	22	31	54	59	176	158	110	81	41	25	15	4	4	3	35

It is a matter of serious regret that the medical attendant had not been directed to give the additional information, whether these individuals had ever been vaccinated, and if so, the interval between vaccination and death. We might thus have determined the very important practical question, which is the object of this paper, viz., whether the prevalence of small-pox, in recent years, is due to the diminished influence of vaccination or the progressive decline of its protective power with increasing age.

In the fourth Annual Report, however, a statistical nosology is recommended, which, if carried out in the Registration of the following year, will do much toward deciding the important question at issue. Under the head of small-pox, the following distinction is directed:

"*c.* Small-pox,—after Cow-pox.

"This entry is never to be used unless the vaccination shall have left a cicatrix; nor even then, until thirty days have elapsed after vaccination. It often happens in an epidemic that children are vaccinated after infection by small-pox, which in such cases pursues its natural course, and should be registered '*Natural Small-pox—vaccination performed only — days before the small-pox eruption.*'

"*d.* Small-pox—after vaccination, which did not leave cicatrices.

"State here the time that has elapsed after vaccination: Thus, Small-pox, two years after Cow-pox.'"*

* We entertained the strongest hope of receiving this new Report in time to use it on the present occasion; but the disappointment of this hope proved of no consequence, since the Fifth and last Registration of England affords no data available or the purpose here indicated.

But to return to the causes which may produce a failure in the vaccinating process. As, however, these points are fully discussed in all works on the subject, a simple reference to them will suffice. The virus may be used before it has undergone sufficient elaboration; vaccination is often performed by unprofessional persons, and not unfrequently carelessly even by the professional man; the constitutional affection may be prevented by totally depriving the vesicle of its lymph; the progress of the vaccine vesicle may be modified by febrile action from whatever cause, or by the complication of all other affections, by which great constitutional disturbance is produced; and there are, also, certain idiosyncracies which secure an impunity not only from the action of vaccina, but also from variola.

It is the uncertainty connected with these causes that renders the results of re-vaccination so very different in different countries; for, as it cannot be known with certainty whether the first vaccination was successful, these statistical reports afford us no safe or conclusive data upon which to build general deductions.

There is also a growing impression that vaccine virus deteriorates in power in proportion to the number of times that it makes the circuit of the human body; and this it is which has led physicians to revert more frequently to the cow for supplies of lymph. But for this opinion, no good reason, and indeed no reason at all, can be assigned. In no respect from that described by Jenner, does the vaccine vesicle of the present day differ; the distinctive signs by which its incubation and progress are marked, are the same now as they were then. The report of the committee of the Medical Society of Philadelphia (*C. J. Coxe*, *Condie*, and *C. D. Meigs*) on this subject, in 1828, is, indeed, conclusive upon this point. It is shown from the condensed opinions of the most eminent and experienced physicians of that city, that their confidence has not at all diminished in the protective power of the vaccine virus; and in confirmation of this opinion, the extraordinary fact is adduced, that, during the prevalence of a most malignant and fatal small-pox, in 1827, but *one* well ascertained death from that disease among 80,000 vaccinated persons, came to the knowledge of the committee.

The recorded statistics of Drs. Mitchell and Bell, relative to the epidemic small-pox which prevailed in Philadelphia in 1823 and 1824, are also in the highest degree favorable to vaccination. Of 248 cases of variola and varioloid treated at the Small-Pox Hospital, 155 were unprotected, of whom 85 died; 64 were vaccinated, of whom but a single one died; 9 were inoculated, of whom 3 died; 7 who had had small-pox before, of whom 3 died; and of the 13 whose condition was unknown, none died.

In Copenhagen, a variolous epidemic prevailed from 1825 to 1827. Of those who had been vaccinated, 428 were attacked; and in 26 of these, all the symptoms of genuine variola were evinced, but only two of them died. Among the unvaccinated, on the contrary, the mortality from small-pox was equivalent to 20 per cent. of those attacked.

In Holstein, from 1801 to 1822, 234,959 were subjected to vaccination, and only two individuals, even two years subsequent to this, had, during all the time, been affected with small-pox. In the kingdom of Denmark, during the same period, only *one* individual among 447,605 vaccinated, had been attacked by modified variola.

Were it requisite, such remarks might be indefinitely multiplied; but

it is enough to show, that it is wholly unnecessary to have recurrence to the cow for fresh vaccine virus, or. with the view to resuscitate the qualities of the supposed deteriorated lymph, to resort to the process of variolo or retro-vaccination. Upon these several points the opinion of Mr. Ceely possesses much value. Speaking of retro-vaccination, he says: "Lymph, which has passed from arm to arm with the greatest promptness and facility, and produced the finest effects, in its first removes from the costive vesicle of the retro-vaccinated cow, is not so readily absorbed by many individuals as current lymph. It rarely fails, but papulation is retarded, and though the vesicle may attain maturity at the normal average period, the completion of that stage is frequently postponed. The vesicles are often smaller, and the diseases really not so well developed as by the stock from which it was derived. But these changes do not appear after the second or third remove. The lymph is restored to its former qualities, and produces its former effects."

Mr. Ceely continues: "Is the practice of retro-vaccination of any real value as a means of renovating humanized vaccine? I confess that from my limited experience, I am unable to discover its advantages, or to admit more than its questionable utility, from one transit through the cow. What humanized vaccine might acquire by repeated and indefinite transmissions, I am not prepared to say. I have no doubt that primary vaccine, passed by artificial means through a series of cows, would lose much of its acrimony, and produce on man a milder, but abundantly active and characteristic disease; but that humanized vaccine, by a similar process, should ever acquire all the attributes of primary vaccine, or become so much *brutalized* as to deserve the epithet of 'renewed,' is more than I am prepared to expect."

As regards the effects of *variolo-vaccination*, which consists in inoculating the cow with the virus of variola, the resulting lymph being employed for the inoculation of man, it is questionable how far it may possess advantages, if any, over the ordinary current vaccine lymph. The mode of doing this has been already noticed when treating of the identity of small-pox and cow-pox. But it may be here added that, in one case, in the hands of Dr. Basile Thiele, of Kasan, an attack of true variola was produced by this lymph, and that in another person inoculated in the arm by the lymph taken from the pocks of this patient, vaccine was reproduced. Could there be any more marked illustration of the identity of variola and vaccine than is afforded by this experiment?

Against the general adoption of this proposal, as well as to the immediate recurrence to the cow for the vaccinia, which last, among the variety of epizootic disorders affecting cattle, it is not easy to distinguish, several strong objections exist. When first taken from the cow, the lymph, in both instances, is often very acrid, producing local inflammation and glandular swellings; and, as regards the genuineness of the new stock of lymph, there will always be doubt until the undesirable experiment of variolous inoculation shall have been made. Moreover, years will often elapse before the true cow-pox, even in large dairies, can be found.

We cannot here pass over an extraordinary statement made by Dr. Lichtenstein, as appears from Hufeland's Journal for 1841. The author, in a paper entitled, "On the Sources from which Matter preservative against the Small-pox has been derived," makes the remarkable assertion, that a pock undistinguishable from vaccina is produced in an unvac-

cinated person who is inoculated with the limpid lymph contained in the pustules caused by tartarized antimony. He further asserts that these pocks are equally protective against small-pox, and that, like it, the lymph may be transmitted from individual to individual. From this source, he actually inoculated and re-inoculated thirty-one persons; and of those, notwithstanding all mingled freely with the infected during the epidemic prevalence of small-pox, not a single one took the disease.*

It remains now to discuss the questions, whether the protective influence of vaccination diminishes in any general ratio to the period of time succeeding vaccination, and whether this law, if true, may not be remedied by re-vaccination. As regards the former question, much diversity of opinion has obtained. Dr. Gregory, who assumes, as the proof of renewed susceptibility to the small-pox, the test of re-vaccination among children, avers that he was unable to succeed in those under ten years of age; and this fact, he says, finds confirmation in the circumstance, that, among the vaccinated within the same age, small-pox does not occur. The statistical facts collected seem to concur in showing, that the ratio of cases of small-pox after vaccination is low before ten years of age; that from the age of 15 to 25, it is at its maximum; and that from this period, it diminishes. In these views, Dr. Leo Wolf and Dr. Mohl of Copenhagen concur. This subsequent susceptibility to small-pox and to cow-pox, is referred by Dr. Heim to the agency of some portion of such susceptibility being left unextinguished by the primary vaccination; and he also regards as connected with this renewed liability, the development of the adult constitution, and perhaps the influence of change of climate. By Jenner, who of course devoted much attention to all questions of this kind, the conclusion, that time produces no such effect on the constitution, was adopted.

Now, assuming it to be an undisputed law, that the constitutional inaptitude to cow-pox denotes a like inaptitude to small-pox, we find that Dr. Gregory's experience in re-vaccination confirms precisely the results just given as to the ratio of cases of small-pox after vaccination, at the three following intervals of age—ten years and under, from ten to twenty-five, and from the last age upward.

Now, it would appear, that, in confirmation of this law, if such it is, a new illustration may be afforded. Reference has already been made on a previous page, when presenting the table containing the law of general mortality, to the probable fact of its being in close relation to the mortality arising from epidemic causes. For example, in a calculation by M. E. E. Duvillard, in reference to this epidemic, prior to the discovery of vaccination, it was found that among the sick there died one in every—

3.0	who were	1	year old,
3.6	"	2	"
5.3	"	3	"
8.1	"	4	"
12.2	"	5	"
17.6	"	6	"

At ten years of age, the mortality became already as low as thirty-four; and as the age of 13 years is the maximum viability (*existibility*),

* Wilson's Lectures on Diseases of the Skin.

so it is this epoch of life at which an individual laboring under small-pox has the least probability of dying. To the practical physician, both as regards the investigation of disease and its prognosis, the fact that the number of deaths at each period of life, occurs in more or less accordance with the predestined law of general mortality, may at least be treasured up as promising to be a useful guide.

There are, however, two exceptions to the general law of mortality in this table of M. Duvillard's, which consist in the comparatively low mortality from small-pox, both at the age below one year, and at the age of thirty and upward; but one of these exceptions, says M. Villermé, from whose paper in the *Annal. d'Hyg., tome IX.*, this table is taken, may prove an error; for, in the small-pox epidemic that prevailed at Copenhagen in 1825–1827, the highest mortality was exhibited by infants under one year of age. This is, in fact, the true law, as is proved by recent data.*

The following table from the Registration of England, illustrates still farther the law of mortality arising from small-pox. In the latter half of the year 1838, this disease destroyed 5,811 lives. Of 1,056 of these deaths, the following were the ages at which they occurred, which may be considered an approximation to the average of the whole:

Years of Age.	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	All Ages.
Deaths.	887	99	15	18	29	5	2	1	1,056

It is thus seen that nearly six-sevenths of the whole number of deaths occurred at the age of four years and under, while at the age of forty and upward, there are but three deaths. This latter fact is then entirely opposed to the opinion that the protective influence of vaccination diminishes in any general ratio to the period of time succeeding vaccination. Indeed, it is proved by all experience from the earliest history of vaccination, that no uniform change in the system gradually destructive of the protecting powers of the vaccine virus, is brought about by time; for, were this so, the evidence of it would be constantly presented in the attacks of the aged by the variolous disease. This table would seem to be entirely opposed to any progressive decline of the protective power of the vaccine virus, were it not that Mr. Farr is of opinion that the majority of these individuals had never been vaccinated, as the great mass were very young at the period of death, and as the poor either neglect vaccination altogether, or at least defer it for years. But upon this point, more precise data will be now adduced.

We shall next, in illustration of the same part of the subject, present a condensed summary of the highly important statistical facts collected by the justly distinguished John Davy, M.D., L. & E., Inspector-General of Army Hospitals, I. R. These data are contained in his excellent work, entitled, "*Notes and Observations on the Ionian Islands and Malta; with some Remarks on Constantinople and Turkey, and on the System of Quarantine as at present conducted.*" London, 1842.

The small-pox was introduced into the Island of Malta by H. M. S. Asia, bearing the flag of Vice-Admiral Sir Pultney Malcolm, which

* See Appendix.

came into the harbor of Malta on the 18th of February, 1830, from Napoli de Romania. The disease spread with a gradually increasing rapidity until the month of July, in which month 1464 persons were attacked. In the following month, in which 1325 fresh cases occurred, there was a slight abatement. It now slowly and gradually subsided until August of the following year, when its cessation was officially announced.

"From its first outbreak," says Dr. Davy, "in March, 1830, to its cessation in August, 1831, 8067 persons were attacked in Malta; and from its first appearance to its cessation, in the adjoining island of Gozo, between April of one year and May of the following, 2284 were attacked; of whom 1172 died in Malta, and 351 in Gozo (making a total mortality of 1523), which is in the ratio of 1 in 6·8 of the number attacked in the former, and of 1 in 6.2 in the latter."

The population of Malta, at this time, was 105,367. The following table is a return of those attacked by small-pox, specifying the sex, age, etc.:

SEX.		AGE.				VACCINATED, ETC.			
Males.	Females.	Infants to seven years.	8 years to 14.	15 years to 28.	Beyond 28 years.	Not vaccinated.	Supposed to have been vaccinated.	Well vaccinated.	Had before Small pox.
4263	3804	2800	2482	2717	68	4850	2720	390	97
Sex of each age.	Males,	1490	1316	1419	38				
	Females,	1310	1166	1298	30				

We here discover, as regards sex, a preponderance on the side of the males, which affords another reference to the general law of mortality. This accords not only with the larger number of males born, and the consequent numerical preponderance of that sex at the period of life most subject to small-pox, but it also gives another beautiful exemplification of the influence of the sexes, as regards births and deaths; for, even before the male infant sees the light of day, there are primary causes inherent in his organization, which are active in his destruction, the ratio of still-born being but two females to three males. And this difference of original organization in the two sexes continues after birth, there being a greater male impressibility, in early life, by agents to which both are equally exposed. This is seen both in the greater number of males attacked, and in the greater number (see next table) that died.

RETURN OF THOSE WHO DIED OF SMALL-POX, SPECIFYING SEX, AGE, ETC.

SEX.		AGE.				VACCINATED, ETC.			
Males.	Females.	Infants to seven years.	8 years to 14.	15 years to 28.	Beyond 28 years.	Not vaccinated.	Supposed to have been vaccinated.	Well vaccinated.	Had before Small pox.
647	525	761	163	241	7	1022	116	25	9
Sex of each age.	Males,	400	86	146	6				
	Females,	352	77	95	1				

Here again we discover the same law as regards the two sexes in the higher ratio of male mortality; and so strongly coincident is this result, both as regards the ratio attacked and the relative mortality, that an exhibition of the general law of mortality at the early ages cannot but be acceptable to the reader. For this purpose we will select the very complete table, showing also the difference of town and country in this respect, furnished by the *Recherches sur la Reproduction et la Mortalité de l'Homme aux differens Ages, et sur la Population de la Belgique. Par MM. A. Quetelet et Ed. Smits.*

RELATIVE MORTALITY OF THE SEXES.

Ages.	Towns.		Relation.	Country.		Relation.
	Males.	Females.		Males.	Females.	
0 to 1 month,	3717	2786	1·33	8180	5769	1·42
1 to 2 "	930	682	1·36	2012	1609	1·25
2 to 3 "	607	500	1·21	1480	1161	1·27
3 to 4 "	532	382	1·39	1192	984	1·22
4 to 5 "	403	322	1·25	968	774	1·25
5 to 6 "	346	329	1·05	831	707	1·18
6 to 8 "	569	508	1·12	1331	1117	1·20
8 to 12 "	1148	1030	1·11	2505	2453	1·02
1 to 2 years,	2563	2409	1·06	4994	4920	1·02
2 to 3 "	1383	1337	1·03	2927	2879	1·02
3 to 4 "	908	908	1·00	1606	1748	0·92
4 to 5 "	556	583	·96	1200	1184	0·99

As it is seldom that tables of the mortality of a whole country give any data below one year of age, this one is doubly valuable; and as it speaks for itself in the plainest language, no further explanation is deemed necessary.

But to return to the two tables of the cases of small-pox and the deaths from the same cause at Malta. The influence of age is found to be strongly marked, the tendency to the disease diminishing with advancing age; and what seems most remarkable, is the almost complete exemption after the age of 28 years. It is also seen that a large number had the disease after supposed vaccination, and that there was not an inconsiderable number of cases of recurrent small-pox. The general mortality, including all ages, was 1 in 6·8 of those attacked, while in infancy, as might have been expected, the proportion was as high as 1 in 3·7; between 8 and 14 years, it was 1 in 15·2; between 15 and 28, 1 in 11·2; and in those above 28 years of age, 1 in 9·7. In the last, the number of data is so small, that the result can scarcely be considered a fair average.

In view of the high interest of these statistical data, the following tables are presented, in further illustration of the relation of age to small-pox:

RETURN, SHOWING THE RESPECTIVE AGE AND SEX OF THE PERSONS WHO DIED OF SMALL-POX FROM THE 16TH MARCH TO DECEMBER 31, 1830.

Years.	Males.	Females.	Years.	Males.	Females.	Years.	Males.	Females.
1	151	154	19	20	7	37	"	"
2	87	57	20	25	12	38	1	"
3	43	31	21	6	5	39	"	"
4	31	25	22	11	12	40	"	"
5	24	22	23	3	4			
6	22	11	24	4	1			
7	11	10	25	1	"			
8	9	8	26	2	2			
9	18	16	27	2	1			
10	8	8	28	1	"			
11	7	5	29	1	1			
12	11	10	30	"	"			
13	11	8	31	"	"			
14	17	14	32	1	"			
15	15	12	33	1	"			
16	10	8	34	1	"			
17	13	8	35	"	"			
18	16	14	36	1	"			
		Males,		585				
		Females,		466				
		Total,		1051				

RETURN OF THE AGE AND SEX OF 91 INDIVIDUALS REPORTED TO HAVE HAD SMALL-POX A SECOND TIME.

SEX.	ATTACKED.				Total.	DIED.	
	Infants to 7.	8 to 15 years.	15 to 28.	Above 28.		15 to 28.	Above 28.
Males,			43	3	46	"	"
Females,			42	3	45	"	"
Total,			85	6	91	9	"

It is to be regretted that we have not also a return of the number attacked at the different ages of life, as this, with the table of mortality of the same kind, would constitute an excellent means of determining whether there really exists a progressive decline of the protective power of vaccinia. There is, at all events, no evidence to sustain the opinion of Dr. Gregory, that there is a renewed susceptibility both to vaccinia and to small-pox among the vaccinated after the age of ten years; on the contrary, there would rather seem to be a diminution of tendency to contract the disease somewhat in the ratio of augmentation of age. As there are but five deaths above the age of thirty, in a total of 1051, it follows that the progressive decline of the influence of vaccination, if such a law does really exist, must make a very sudden halt about the age of 30.*

* See Appendix.

From the preceding tables, it appears that the mortality among those "not vaccinated" was 1 in 4·7; among those "supposed to have been vaccinated," 1 in 23·4; among the "well-vaccinated," 1 in 15·6; and lastly, among those attacked a second time by small-pox, 1 in 10·8. The higher mortality among the "well-vaccinated" than among those "supposed to have been vaccinated" is an apparent anomaly, which admits of explanation only on Dr. Davy's supposition that the majority of the former may have belonged to the infantile age.

"As regards the general effect of vaccination," says Dr. John Davy, "in its influence both as affording protection from small-pox to a considerable extent, and mitigating its severity when not preventing the attack, the facts given are clear and satisfactory. *It is a curious circumstance, that the proportion of those who died after a second attack of small-pox, was, as has been already pointed out, greater than in the instances of those who had the disease after vaccination.*"

But these highly interesting and important statistics afford a still stronger confirmation of the beneficial effect of vaccination. This is exhibited in the comparative exemption of the British troops serving at Malta, as shown in the following returns:

RETURN OF MEN, WOMEN, AND CHILDREN, BELONGING TO THE TROOPS SERVING IN MALTA, WHO HAD BEEN PREVIOUSLY VACCINATED, OR HAD HAD SMALL-POX.

Sex.	Strength.	Previously Vaccinated.	Had Small-pox previously.
Men,	2219	706	1513
Women,	196	49	147
Children,	315	305	3
Total,	2730	1060	1663

RETURN OF CASES OF SMALL-POX AMONG THE TROOPS.

Sex.	Attacked.	Of the previously Vaccinated.	Had Small-pox before.	Died.	
				After Vaccination.	After Small-pox.
Men,	10	7	4	1	1
Women,	1	1	..	..	..
Children,	3	3	..	2	..
Total,	14	11	4	3	1

As to the deductions warranted by these data, we will allow the philosophical Inspector General of Army Hospitals to speak for himself:

"The native population, in 1830, was estimated at 100,839 persons; amongst whom it appears, from preceding returns, 1 in every 12·1 was attacked with the disease, and 1 in every 85 died; but amongst the military, including their wives and children, the proportion attacked, as shown above, was 1 in 188, and the mortality was only 1 in 682.

"These results, demonstrative of the protecting and mitigating power of vaccination, are the more remarkable, and the more to be depended on, as no precautions whatever were taken to prevent intercourse between the military and the inhabitants. It is true that the majority of the soldiers lived in barracks, but they were not confined to barracks; during

the whole time that the epidemic prevailed, they had the usual liberty of going at certain times into town, free from all restriction. And, as regards their families, many of them lived in the close streets adjoining the barracks, and the children mixed freely with other children of the place; notwithstanding, one woman only became infected, and three children—a remarkable fact.

"Reasoning from the facts contained in the preceding returns, the influence of vaccination in preventing small-pox appears to have been less than that of small-pox itself in preventing a second attack,—whilst the mitigating power of the former, compared with that of the latter, seems to have been greater: thus, of those attacked by small-pox, after having been vaccinated, as it was supposed, the mortality was only 4·2 per cent.; but among those who had the disease a second time, the mortality was as high as 9·3 per cent.,—a result which, I believe, is in accordance with common experience, if I may so express myself respecting an event (a second attack of small-pox), which is held to be a rare occurrence. The recurrence of the disease shows a peculiar susceptibility to it,—and on this ground, the severity of its effects has been attempted to be explained. But in such matters, I fear it must be confessed that explanation is commonly unsatisfactory, and that our knowledge is limited by the facts. An instance has been related to me of a lady, the mother of ten children, who had small-pox eleven different times; first in infancy, and subsequently on the occasion of each of her children having it, and what is very remarkable, the latter attacks of the disease were not less severe than the first; no mitigating influence appeared to have been imparted to the constitution even by frequent repetitions of the specific morbid actions peculiar to variola. This information I received from one of the sons of the lady,—an accurate observer himself, and a man of unquestionable veracity."

It were easy from among our notes upon this subject taken within a year or two, to adduce evidence of a like kind, until a mass should accumulate which might be figuratively compared to "Ossa upon Pelion." For example:

Varioloid and Secondary Small-pox.—M. Serres took this occasion to mention, that, from the observation of between 1700 and 1800 cases of small-pox, he has arrived at the conclusion that secondary attacks of small-pox, are as common after small-pox itself, as after vaccination; that, in fact, vaccination has the simple effect of preventing a first attack of small-pox, being merely of the same efficacy in that respect as an attack of small-pox itself.—*Gazette Medicale.*

M. Millon, in the *Bulletin de l'Academie Royale de Médecine*, October, 1842, says, speaking of the epidemic small-pox at Loreze, in 1836, that every individual who had not been vaccinated, became affected sooner or later with the disease, which in them lasted from 15 to 25 days,—a difference in duration that depended on the mildness or severity of the disease. During the prevalence of the epidemic, many who had not been previously vaccinated, underwent the process, which invariably rendered milder the disease. Previous vaccination secured no exemption, but the eruption in these cases proved mostly chicken-pox, and in a few varioloid. To distinguish between the variolous and the varioloid eruptions, was often a difficult matter during the early stage of the disease. This distinction, however, became easy by the seventh or eighth day, for then the varioloid eruption began to dry up, while the variola

ran on to suppuration. These eruptions are regarded by M. Millon as essentially the same, the difference arising from the circumstance that the disease in one case runs its natural course, and in the other is modified by vaccination or transformed into the vaccine modification. Vaccination has, therefore, like inoculation, created a new variety of variola. The superior advantages of vaccination are strongly advocated by M. Millon, on the ground that, if it does not always secure an exemption from variola, it effects the more essential object of nearly always depriving it of all danger; while inoculation with the small-pox, on the other hand, not only gives no greater immunity than vaccination, but actually serves to propagate a highly contagious disease, independent of its being not unfrequently attended with death. An important fact is added by M. Millon, as the result of his own observation. While in small-pox, the chief mortality takes place during the suppurative stage, the deaths that occasionally occur from attacks of small-pox, in the vaccinated, frequently happen during the feverish stage, or the first appearance of the eruption; and hence he concludes, that the same person, under the then existing constitutional circumstances, would be equally liable to fall a victim to any other febrile affection.

In several other variolous epidemics, it has been found that among those who had previously undergone the disease, a greater number were seized than among those who had been merely vaccinated. It appears, indeed, according to one of the conclusions of the Commission of Vaccine, in France, in 1839, that the progress of the variolous epidemic is instantly arrested by the simultaneous vaccination of the mass. And as regards the general question of vaccination being followed by small-pox, it may be here added, that it is no ways important to inquire, whether in these cases vaccination had been perfect; for instances are equally numerous in which small-pox has followed variolous inoculation. An infallible remedy in vaccination was not contemplated even by Jenner.

It were an easy matter to exhibit, by a comparison of the mortality caused by small-pox prior to the introduction of vaccination, and subsequently to that event, the most convincing proofs of the triumphs of the cow-pox, as a prophylactic agent. The mass of evidence that has thus been accumulated, finds no parallel in any other question of scientific investigation. As new light has been recently thrown upon this point by James Stewart, M.D.,* who devoted much time in making a personal examination of the records of certain institutions, and especially of orphan asylums, it may be well to present a condensed summary of his results.

Leaving large cities, whose inhabitants are constantly exposed to the numerous causes which produce failure, in the progress of the vaccine vesicle, Dr. S. examined the different institutions for the reception of children. Here, as the greatest care is bestowed on the details of vaccination, it is that we are to look for its fullest benefits, up to the age of fourteen years, which is the average period at which the children are discharged.

"In the Orphan Asylum of Charleston, S. C.," he says, "which, in the year 1829, contained 150 children, not a single case of small-pox or varioloid occurred during the prevalence of that disease, although no

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* *See his Practical Treatise on the Diseases of Children.*

additional restriction was imposed upon their intercourse with the citizens.*

"The aggregate number of children received into the different orphan asylums of Philadelphia, since their establishment to the beginning of 1841, is 1,009, and among the whole, there has been but one death from small-pox; this occurred some years since out of 65 cases of the disease. The children were carefully examined, both with reference to the virulence of the affection, and to their condition at the time of the attack. Ten were without the usual cicatrix left by the vaccine vesicle, and the child that died was one of the number destitute of this mark.

"In the city of New York, the total number received in all the orphan asylums, is 2,384; and although the small-pox appeared in two or three of them, yet it was in a greatly modified form, and no deaths have occurred from this cause. A similar result is obtained also from the House of Refuge, which exhibits an aggregate number of 2,657 children received during 16 years. The whole number, therefore, that have been inmates of these various institutions in the city of New York, is 5,041, and not a single death from small-pox has at any time occurred.

"Baltimore also presents the like return, out of 3,500 children that have been for several years in the alms-house and different orphan asylums of that city.

"The entire number of children, therefore, that have been under the care of the above-mentioned institutions, since their establishment, is 9,550, and but one death has occurred from small-pox in the course of thirty years; and this one, it is fair to presume, had not been vaccinated, as no mark of this operation was found after the most careful examination. The aggregate number that have been received in the above-named institutions amounts at this time, November, 1843, to upwards of 11,000, without any variation in the results of vaccination already stated.

"The results of vaccination thus ascertained, cannot be followed after the children have left these institutions, but up to that time the benefit may be learned by comparing with them the effects of small-pox before the introduction of vaccination; its ravages being principally among the young."

In a note to the end of the volume there are additional statistics, furnished by Dr. Morrell, physician at Long Island Farms (a department of the New York Alms-House), of the cases of varioloid which there occurred from the first of November, 1834, to the first of May, 1843. "From this it appears that of 5,856 children who were received during that period, there were but eight deaths from varioloid, among those in whom it was ascertained that vaccination had been practised. This result, added to that already stated at page 467, exhibits an aggregate of nearly 16,000 children vaccinated, and but eight deaths among them from the effects of small-pox contagion."

As regards the interrogatory—"*Is the protection increased by re-vaccination, and if so, under what circumstances?*—we find the Germans very decidedly in favor of the measure, while the French are, to some extent, divided in opinion. On the affirmative side of the question—those advocating the necessity of re-vaccination—are found the names of Heim

* Report of the Committee of the Board of Health of Charleston, etc. Amer. Jour. Med. Sciences, November, 1831.

of Wirtemberg, Mohl of Copenhagen, Brown of Edinburgh, and Gregory of London. This is a question of very high importance, and one deserving of the deepest investigation. In Prussia an order was issued in 1833, requiring that each soldier entering the army should be re-vaccinated; and this regulation has been in force ever since, and a report of the re-vaccinations has been annually sent to the war-office by the medical officers. To Dr. D. Francis Condie, in his "*Practical Treatise on the Diseases of Children*," we are indebted for the following valuable tabular arrangement of the data accessible relative to re-vaccination:

TABLE I.—RE-VACCINATIONS PERFORMED IN THE PRUSSIAN ARMY.*

	NUMBER RE-VACCINATED.	FAILED.	IMPERFECT.	SUCCESSFUL.
1831	8,804	5,525		3,279
1832	7,716	3,047		4,129
1833	48,478	33,209		16,679
1834	44,454	15,488	12,287	18,136
1835	39,192	23,877		15,269
1836	42,124	14,048	9,940	15,315
1837	47,258	15,393	10,557	21,308
1838	42,041	14,252	8,672	19,117
1841	44,941	13,523	8,635	13,523
Totals	324,468	138,362	50,091	126,755

TABLE II.—AGGREGATE OF RE-VACCINATIONS UPON RECORD, WITH THEIR GENERAL RESULTS.

	Number re-vaccinated.	Failures.	Spurious or Imperfect.	Successful.
Dr. Otto, Germany, 1829 [1833	189	159	9	21
— Heim, Wirtemberg, Army 1829,	4,802	1,724	1,870	1,208
Prussian Army, 1831 - - -	8,804	5,525		3,279
" " 1832 - - -	7,176	3,047		4,129
" " 1833 - - -	48,478	33,209		15,269
" " 1834 - - -	44,454	15,488	12,287	16,679
" " 1835 - - -	39,192	23,877		15,315
" " 1836 - - -	42,124	14,048	9,940	18,136
" " 1837 - - -	47,258	15,393	10,557	21,308
" " 1838 - - -	42,041	14,252	8,672	19,117
" " 1841 - - -	44,941	13,523	8,635	13,523
Dr. Festler, Italy, 1832 - -	60	40		20
— Wendt, Copenhagen, 1832 -	3,964	1,208		2,756
— Lurott, Bischwiller, 1832 -	86	43	31	12
— Aggens, Silesia, 1836 - -	962	72	68	822
Vaccine Committee, France, 1839	6,652	4,651	1,283	718
" " " 1840	2,214	1,717	227	270
" " M. Villeneuve	2,199	1,976		223
Dr. Forry, Fort Wood, N. Y. 1840	560	364	55	141
— Kirkbride, Philadelphia, 1840	209	165		44
M. Bosquet, Paris - - -	90	53		37
Deaf and Dumb Institution, Paris	128	93	20	15
Total	346,583	150,627	53,654	133,042

* This table and the following disagree, on account of a transposition of the years; but this does not affect the totals. We have preferred giving them as they are presented in Dr. Condie's volume, inasmuch as it is not easy for us to say which table has the proper arrangement.

TABLE III.—CICATRICES IN THOSE RE-VACCINATED.

	Number vaccinated.	Of these had perfect cicatrices.	Imperfect cicatrices.	No cicatrices.	Re-vaccination successful in
1834	44,454	33,634	7,134	3,686	18,136
1836	42,124	32,635	6,543	2,946	15,315
1837	47,258	37,299	6,903	3,056	21,308
1838	42,041	33,819	5,645	2,577	19,117
1841	44,941	36,182	6,193	2,567	13,523
	220,818	173,569	32,418	24,832	87,399

TABLE IV.—RESULTS OF A SERIES OF SECOND RE-VACCINATIONS.

	Failures in first re-vaccination.	Second re-vaccination.	Successful.	Total. Successful, first and second re-vaccination
1834	15,488	4,530	866	19,002
1836	14,048	14,048	1,569	16,884
1837	15,393	15,393	2,243	23,551
1838	14,252	14,252	2,306	21,423
1841	13,523	13,523	2,254	15,777
	72,704	61,746	9,238	96,637

As regards the ratio of successful cases of re-vaccination, tables I. and II. give very nearly the same result, the former, or Prussian table, giving 39 per cent., and the latter, comprising all known records, 38·4 per cent. Re-vaccination, as shown by table IV., proved successful in the ratio of 1 to 12·7 cases.

These results afford conclusive evidence of the necessity and importance of re-vaccination, under all possible circumstances. Prior to the order for re-vaccination in the Prussian army, it was not unusual for the different barracks to be a prey to varioloid disease; but now the whole army, notwithstanding its repeated exposure to similar causes productive of the disease, enjoys an almost entire immunity.

In the results of re-vaccination in the Prussian army for 1840, by Dr. Lohmeyer, published in the *Medicinische Zeitung*, April 21, 1841, he draws the following conclusions:

"In the past year more frequently than in any other, the vaccination was performed by lymph taken from the genuine and regular vaccine pustules on adult persons; for past experience has consequently led military practitioners to be more strongly convinced that for the vaccination of adults, lymph taken from adults is to be preferred to that taken from children, and that it produces a more powerful re-action and more strongly developed pustules. And that the pustules thus produced do actually protect from the contagion of small-pox is proved by this, that in the 4th corps, in which the plan has been long followed of vaccinating adults with lymph taken from good pustules in other adults, there has not occurred during three years a single case of any variety of small-pox among those in whom the vaccine pustule ran its ordinary course, nor more than one case among those who were unsuccessfully re-vaccinated,

although small-pox was constantly more or less rife in the neighborhood in which the corps was quartered.

"With respect to the advantage of re-vaccination as a preventive of small-pox, the experience of 1840 proves it in a striking manner; for during that year there occurred only 74 cases in the whole army; and of these, 46 were cases of varicella, 21 of varioloid disease, and only 7 of genuine small-pox. Of the last, 2 proved fatal; and neither of the patients had been re-vaccinated after his enlistment. In general, just as in former years, most of the cases of genuine and of spurious small-pox occurred in recruits soon after their enlistment and before they had been re-vaccinated. Of those who had been re-vaccinated, it has been already stated that only 10 were affected; and of these 7 had varicella, 2 varioloid disease, and only one genuine variola."—*British and Foreign Med. Review.* Jan. 1842.

The results of the Prussian Army for 1841, are equally favorable toward re-vaccination. In the Berlin *Medicinische Zeitung*, May, 1842, the following extract accompanies the Report:—

"Among those vaccinated in 1841, two were affected with varicella, and eight with varioloid disease. That vaccination sometimes only succeeds after having been several times had recourse to, was observed in this as well as in former years. The proportion of cases in which this occurred was as 19 to 100. A soldier who had been three times vaccinated during the three previous years, and always unsuccessfully, had six well-marked pustules after the operation was performed, which would show that some temporary influence had formerly prevented the formation. The influence of re-vaccination in the diminution of variolous affections in the different military hospitals, is most remarkable. In 1841 there were only fifty cases, of which 15 were varicella, 34 modified, and 10 true small-pox. Three died; of these, one had not been vaccinated on his admission into the army, as his vaccine certificate showed that the operation had been done shortly before he joined; the second occurred in a recruit, who had not been re-vaccinated; and the third was a non-commissioned officer, who had been re-vaccinated some years before, but without success. Before the order for re-vaccination was issued, the different barracks used to be a prey to varioloid disease; it has now, however, disappeared."—*London and Edinburgh Mon. Jour. Med. Sci., May*, 1842.

We have also the results of the re-vaccination in the Hanoverian Army for the years 1837-8-9; but as they are strictly confirmatory of those of the Prussian Army, the following extract from the *Hannoversche Annalen*, Heft ii., 1840, must suffice:—

"Among the confirmations which this Report affords of the conclusions arrived at by Professor Heim (*Historich-kritische Darstellung der Pockenseuche*), are the following:—The cicatrices of former vaccinations afford, neither by their number nor by their characters, any indication of what will be the result of re-vaccination. A repetition of re-vaccination, after previous failures, not unfrequently produces a complete or an incomplete result. The lymph of good pustules, after re-vaccination, is in no degree inferior for the purpose of re-vaccination to the lymph from children. *In those who have had variola, the susceptibility of re-vaccination exists in no less a degree than in those who have been vaccinated;* for of 112 pitted with small-pox, 16 received complete re-vaccination, 21 incomplete, and 75 none at all, that is, in nearly the same proportion as among the vacci-

nated. On the contrary, it appeared that after varioloid disease scarcely any were susceptible of re-vaccination; for of 34 such who were re-vaccinated, one only showed any result, and that was imperfect, affording an additional proof that variolois is an actually varioloid disease, a re-variola."

It was before remarked that in France the profession is somewhat divided upon the question of re-vaccination. According to the Annual Report of the Vaccination Committee of France, in 1839, of 6652 re-vaccinations, which were carefully watched, a pustule, similar to the normal one, was observed in 718 cases; in 1283, the pustule was of a doubtful character; and in 4651, the operation failed completely. The following are the general conclusions of the Committee:—1. It thus appears that a large majority of persons are not capable of contracting vaccinia twice, and consequently that re-vaccination is generally useless. 2. Even when re-vaccination has had a positive result, it has not always protected the person from the contagion of variola 3. Re-vaccination, at least as a general measure, is disapproved of by most medical men, on the ground that the confidence of the public would be shaken, by thus exhibiting a want of faith on the part of the medical profession. 4. It is maintained that the vaccine virus has undergone no change by having been transmitted through a multitude of persons. 5. The immense majority of the vaccinated, though in immediate contact with those that were suffering, remained unaffected, either by the sporadic or the epidemic variola. 6. Vaccination has unquestionably continued, in the epidemics of small-pox, which have occurred in different departments, to possess the power of arresting the evil, by reducing the genuine variola to varioloid disease.—This is certainly a very inconsiderate Report; and it was strongly opposed by some members of the Academy, on the ground that it was too decided and peremptory. It was remarked by M. Bousquet that, from his own experience, he could say that a perfect normal pustule was induced in 30 among 138 cases of re-vaccination. Of 90 persons of Versailles vaccinated by him, in 37, genuine vaccine pustules followed. M. Piorry suggested that re-vaccination might possibly protect from the varioloid, as the first vaccination does from variola itself.

In the last place, we shall give our own experience upon the subject of re-vaccination, based upon 686 cases, a detailed account of which was published in the *Amer. Jour. of Med. Sci.* for April, 1842.* For the present purpose, the following extracts will suffice:—

"As regards the data constituting the basis of this paper, it may be remarked that they were furnished at Fort Wood, in the harbor of New York, which offers, from the circumstance of its being a depôt for recruits, great facilities for prosecuting inquiries in relation to vaccination. On an average of the last five years, 1800 recruits have annually passed through this post, all of whom it is necessary to re-examine, with a view to physical and mental defects, and every one of whom ought, without reference to previous vaccination, variolous inoculation, or natural small-

* This title was left blank originally, on the ground of secrecy. Each dissertation is accompanied with a sealed packet, having some device or motto, enclosing the author's name and residence; and as this is opened only in the case of the successful candidate, the names of all the other writers who can get back their essays with the sealed packets, remain unknown.

pox, to be vaccinated. Acting upon this opinion, the writer, while stationed at this post (from May to November, 1840), subjected every recruit, except the few vaccinated at several of the recruiting stations, to the influence of vaccine virus. Previously, it was customary to vaccinate those only who did not exhibit marks of variola or distinct cicatrices of prior vaccinia. In the cases comprising the statistics now presented, two punctures were generally made in each arm with fresh virus (crusts), obtained from the Surgeon-General's Office, or matter (either crusts or lymph taken on the eighth day), procured from subjects just vaccinated. The register was kept with as much accuracy as practicable. Some difficulty was experienced from the ignorance of individuals, some having no knowledge of any difference between small-pox and cow-pox. The results now presented are intended, without deducing any general conclusions, merely as a contribution toward the mass of statistical facts already furnished by different countries of Europe.

"Of the 686 recruits vaccinated at Fort Wood, 285 were natives of the United States, 242 of Ireland, 81 of Germany, 49 of England, and the remaining 29 of other countries. This fact is of no farther importance than as showing the general character of the persons subjected to the operation. The majority belonged to the humbler walks of life; some there were who, by dissipation or extravagance, had reduced themselves from a higher sphere in life to the necessity of enlisting; while the Americans who fill the ranks, are, with scarce an exception, such as have proved themselves unfit for the trusts of civil life. The mean age of all (excluding 40 boys with an average age of 15) was 25 years.

"Of the total (686) vaccinated, 560 had been previously vaccinated, 74 had had small-pox naturally, and 52 had not been inoculated either with the vaccine or variolous virus, and had not had the disease naturally. It is thus seen that these statistics are not entirely restricted to cases of re-vaccination.

"Among the series of questions put to each recruit was this one,—'Have you ever been exposed to the contagion of small-pox?' And to this interrogatory, among the 560 previously vaccinated, 371 answered in the affirmative, and 189 in the negative. Of the former, 39 had, according to their own views, which were corroborated by the pitted condition of the face, suffered from small-pox in a modified form: but some of these, perhaps nine, averred, upon traditional authority, that they had taken the disease at or about the period of vaccination in infancy. Although we admit that vaccination is by no means an invariable prophylactic against an attack of small-pox, yet it must be borne in mind that it is impracticable to determine, whether the systems of persons having variola or varioloid subsequently to vaccination, had been fairly and fully subjected to the influence of the cow-pox virus.

"Of the 560 previously vaccinated, 381 exhibited good cicatrices; in 134, they were indistinct or imperfectly developed; and in 45, no cicatrix was visible, the operation in these last having, according to their own assertion, succeeded imperfectly, or after two or three trials, failed.

"Of the total vaccinated (686), perfect, regular, and well-formed vesicles followed in 188; and in 63 besides, the characteristic marks, with some anomalies, were exhibited. In these last, in some the specific inflammation proved very violent, the vesicle, instead of drying into a hard scab, being converted into an ulcer; and in others, which was the larger proportion, the vesicle became prematurely red and itching, forming a

conoidal pustule, which contained, instead of a clear and transparent lymph, an opaque fluid, surrounded by a slight areola of irregular shape; and the succeeding scab, which was small, dropped off prematurely. In these latter cases, it is presumable that the individuals possessed a partial immunity from small-pox.

"But it is necessary, in these statistics, to distinguish the previously vaccinated, the unvaccinated, and those who had labored under variolous disease. Of the 560 previously vaccinated, 196 took the disease on re-vaccination, including those cases (55) which, from the irregular process of the vesicle, have been regarded as affording a partial protection from cow-pox. Of these 196, 109 had been previously vaccinated before the age of five years, 48 between the ages of 5 and 10, and 39 subsequently to the latter age. To determine, then, the period during which vaccination gives a "charmed" life, it is necessary to institute a comparison between these and the whole number vaccinated. Thus, of the 560 previously vaccinated, 316 took place before the age of 5 years, 133 between the ages of 5 and 10 years, and 111 after the latter period.

"Hence it follows, though not an exact result, that, as the ages of the great majority of the men ranged from 20 to 33 (the average being 25 years), and as the ratio of successful re-vaccination is very nearly the same after each interval of age (being about one-third), the limit of the protective powers of cow-pox is not restricted to any precise number of years. These relative ratios among the 560 previously vaccinated, may be thus represented:—

	Under 5.	5 & under 10.	10 & upward.	Total.
Number of vaccinations, ...	315	133	111	560
Number of successful re-vaccinations,	109	48	39	196

"Of the seventy-four individuals, who had previously suffered from small-pox in the natural way, twenty-nine now exhibit the genuine vaccine vesicle. Of these twenty-nine, twelve had distinct marks of small-pox on the face, trunk, and extremities, nine were slightly pitted, and eight presented scarcely any perceptible scars. A German, *æt.* twenty-six, who is much pitted and scarred, and who shows a well-marked cicatrix of a successful vaccination, at a period of his life prior to the varioloid attack, now exhibits genuine vaccinia. A Pole, *æt.* twenty-nine, has a good cicatrix, having been vaccinated when six years old, and although often exposed to the contagion of small-pox with impunity, has now true vaccine pustules. Two other individuals, one *æt.* twenty-seven, and the other thirty-two, both vaccinated before two years of age, and both often exposed to the variolous contagion with impunity, have now genuine kine-pock. An Irishman, *æt.* twenty-four, says that he underwent inoculation with the virus of small-pox when four years old, and shows four or five imperfectly marked pits on the face, which appeared, he avers, at the same time. Although often exposed to variola with impunity, he now presents the true vaccine disease. An American, *æt.* thirty-three, has no cicatrix of vaccination; he avers that the operation, which was performed several times, invariably failed, and that he has been on board ship with 200 cases of small-pox without contracting the disease; and in the present instance there is again a failure. While the last is a case of natural insusceptibility of small-pox, being one of those rare diatheses which enable persons to pass through life apparently insensible to the variolous and vaccine poisons, the preceding cases show a condition of the system

termed the *variolous diatheses*, which favors the phenomenon of recurrent small-pox.

"Of the fifty-two unvaccinated, the operation succeeded perfectly in twenty-five. Some of these were registered as unvaccinated merely because no cicatrix was visible; but the absence of this cannot be taken as absolute proof that the individual had never been vaccinated.

"It has generally been regarded that a distinct, circular, punctulated, and not very large cicatrix, affords a pretty certain indication that the vaccine affection is perfect; but the data here presented do not show that the system which has this cicatrix, is more secure, after a lapse of fifteen or twenty years, against secondary vaccine disease, than those constitutions in which the cicatrix wants these distinctive characters. This conclusion is deduced from the fact, that the two kinds of vesicles here reported as succeeding re-vaccination, viz., the *perfect* and the *anomalous* (the former being supposed to indicate the *complete*, and the latter the *partial* protective influence), followed in about an equal ratio in the cases of *distinct*, *indistinct*, and *invisible* (those alleged to have disappeared) cicatrices. In each of these three classes of scars, the perfect vesicles averaged about one in every four re-vaccinated; and the anomalous vesicles maintained the mean of about one in every ten. It has already been established in Europe by statistical facts, that the character of the cicatrix does not enable us to determine how far the variolous or vaccine disease supervening will be modified; and this opinion, reasoning upon the doctrine that cow-pox and small-pox are identical in their nature, is corroborated by the data just adduced.

"It would appear that the following laws have been pretty clearly determined: 1. When the interval between the primary and secondary vaccination does not exceed five years, the skin seems entirely insensible to the vaccine poison. 2. After an interval exceeding ten years, the virus most commonly irritates locally, a scab forming on the eighth day, which, soon falling off, leaves no permanent cicatrix; and 3. In another class of cases, after the same interval, the second vaccination runs a perfectly regular course, the lymph being found to propagate a good and genuine cow-pock. Now, as it is generally admitted that the susceptibility to be affected by vaccinia, indicates a similar liability to variola, and *vice versâ*, it is presumable, when re-vaccination is followed by a genuine vesicle, that the individual is equally subject to the influence of the miasm of small-pox. If the two viruses are equally destructive of each other and such they doubtless are, it follows that the first class of cases above described will effectually resist the cause of small-pox; that, in the second, the disease would be much modified; and that, in the third, under circumstances favorable to the development of the variola, the malady might exhibit all the virulence of its unmodified form.*

"From a general view of all these facts, it may be concluded, as an approximation to the truth as near as such imperfect data will allow, that, among the 560 cases of re-vaccination, 364 retained complete protection and 55 partial immunity, while the remaining 141 had entirely lost the protective influence."

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* Dr. Jenner himself, in his *original* essay, announced that in the human body the susceptibility to cow-pox is, after a time, renewed. *Cyc. of Pract. Med., art. Vaccination.*

What surprised us most, at the time of conducting these experiments, was the unexpected result of a higher ratio of successful vaccinations among those whose scarred and pitted faces spoke too plainly of the ravages of the fell destroyer, than the re-vaccinations among those who had been *simply vaccinated!* The whole may be thus arranged:

	Cases.	*Successful.*	*Imperfect.*	*Failures.*
Vaccinated,	560	141	55	364
Previous Small-pox,	74	29	"	45
Unvaccinated,	52	25	"	27
Total,	686			

It is thus seen that the successful vaccinations among those who had had small-pox amount to 1 in every 2½, while, in the re-vaccinations, this ratio is only 1 in every four. At the time, we doubted the truth of these results, believing that the number of those having had the small-pox or perhaps varioloid (74) was too small to constitute a fair average; but since then, the evidence of which appears in this paper, our doubts have been entirely removed. Thus, in Dr. Davy's statistics at Malta, it is shown that although the influence of vaccination in preventing small-pox, was less than that of small-pox itself in preventing a second attack; yet of those attacked by small-pox after having been vaccinated, the mortality was only 4·2 per cent., while the cases of recurrent small-pox gave a mortality as high as 9·3 per cent. A like result, it has been also seen, occurred, according to Drs. Mitchell and Bell, at the Small-Pox Hospital at Philadelphia, during the epidemic of 1823 and 1824; for, while but a single person died out of 64 vaccinated, three died out of 9 who had been inoculated with variola, three died out of 7 who had had small-pox before, and of 155 wholly unprotected, 85 died. And it may here be added in reference to the small-pox epidemic, which, during 1840, attacked in France 14,470 persons, of whom 1668 died, that out of 24 cases of recurrent small-pox, three died, while out of 406 persons attacked subsequent to vaccination, but six cases proved fatal. (*De Claubry.*) The conclusions deduced from the data of this report are: *First.* That small-pox finds a prophylactic in the regular vaccine infection; but that the protection is not absolute, as a small portion of the vaccinated are still liable to an eruptive disease, known by the common name of varioloid. *Secondly.* While small-pox has a mortality among the unprotected of 1 in 8½, the varioloid affection is generally mild, seldom destroying more than 1 in 100.

In the results of re-vaccination in the Hanoverian army, it has likewise been seen that the susceptibility to the vaccine virus is about equal in those previously vaccinated and in those previously affected with variolous diseases. Indeed, the majority of the most recent writers incline to the opinion, that vaccination is more powerful in modifying small-pox than a previous attack of small-pox, either natural or inoculated. But after all, we feel inclined to put most faith in the following table quoted from Dr. Heim, which places small-pox and cow-pox on an equality:

Vaccinated after small-pox with success . . .	32
" " modified . . .	26
" " without effect . .	42
	100

Re-vaccinated with success	34
" modified	25
" without effect	41
	100

We are disposed to believe with Jenner that when the system can be fully infected with the vaccine disease, a protection is afforded against the occurrence of small-pox, which will remain unimpaired with the continuance of life. But, at the same time, experience has established the fact that among a given number apparently successfully vaccinated, there are some in whom, from the various and not well-determined causes which interfere with the success of vaccination, a certain degree of susceptibility to variolous infection would seem to have been left unextinguished, and which appears to augment partially with the lapse of time. That re-vaccination exerts a powerful influence in diminishing these varioloid diseases, by giving to the system a new protection, has been abundantly proved by the statistics of re-vaccination furnished by the German states. As the mere admission of a possibility of a decline of the vaccine influence, shows the obvious necessity of re-vaccination, there remains no other question to be determined than the periods proper for the performance of the operation.

Re-vaccination, in truth, promises us more than one advantage. Simple and harmless in its operation, contrary to variolous inoculation which serves to propagate the disease itself, it will determine, if the vaccinated person is susceptible of its influence, in the first place, the unprotected state of the system, and, in the second, the future protection of the individual. But to determine precisely the length of time that the system is protected, is a question that does not admit of solution in the present state of our knowledge. From the preceding facts relating to this point, we are led to infer, more especially in considering the physiological changes which are known to be constantly occurring in the system, that the existence of this protecting influence has a variable period. *Let our object, therefore, be to secure, at every period of life, the perfection of vaccination.*

"You must bear in mind," says Erasmus Wilson, Esq., "that the greatest safety against small-pox that man can enjoy, is the possession of that modified constitution that succeeds to the fever of small-pox. Experience teaches that the amount of eruption is of little consequence, as much benefit flowing from the benign, as from the most confluent kind —from inoculated as from natural small-pox; and I have no hesitation in declaring that as much protection as small-pox can bestow, is derivable from perfect vaccination."

"I should advise," he continues, "that vaccination be repeated every seven or every ten years. If the system receive not the inoculated virus, it may be regarded as protected, and no inconvenience results to the subject of operation. While, on the other hand, if the operation be successful, the inconvenience will be temporary and trifling, but the advantages great."

The epidemics of small-pox, which have appeared in various parts of Italy during the last few years, have afforded Italian practitioners an excellent opportunity of studying many points connected with it. All the medical men, and M. Tommassini in particular, agree in stating that the

persons attacked were either adults or individuals who had been vaccinated for many years previously. When the disease occurred in children recently vaccinated, it was a simple varioloid or varicella. From the facts thus observed, the celebrated professor of Italy concludes that the preservative influence of vaccination lasts about ten or twelve years. Hence, he advises that re-vaccination should be had recourse to after the lapse of this period.—*Prov. Med. Jour.*, April 29, 1842, from *Il. Ra. Med.*

In the *Annales D'Hygiène*, for July, 1837, Tome XVIII., there is an extended paper entitled "*Histoire d'une Epidémie de Variole, etc., par M. Charles Roesch*," in which the following directions as regards re-vaccination, and of which we highly approve, are given:—.

1. To submit to vaccination all individuals who have not been vaccinated, even when they have had variola;

2. To repeat the vaccination ten or twelve years after the first vaccination;

3. If this re-vaccination does not prove successful, it will be necessary to repeat it from year to year until complete success shall follow;

4. Should the re-vaccination prove entirely successful, the disposition to contract small-pox ought to be, for many years subsequently, excessively feeble; but, notwithstanding this condition of the system, that is, an individual successfully re-vaccinated, a proper exercise of prudence would require, after ten or twelve years, a second re-vaccination.

Now, this is a philosopher after our own heart. We go upon the principle, *that the more you vaccinate the better.* We have re-vaccinated ourselves annually for the last ten or twelve years, but the year of our complete success has not yet come; and we regard ourselves, judging from the fact of repeated exposure, as entirely protected against the variolous poison. If individuals are successfully vaccinated in childhood, all facts would seem to prove that there is no necessity for re-vaccination before the tenth year of age; and the same data lead to the conclusion that the most suitable age is from the period of puberty to that of confirmed manhood. Our own opinion is that vaccination should be repeated at the age of 15 years or earlier, and again at 25. After this last period, as man seems to acquire, with the advancing years, a natural inaptitude to variola, there would seem to be no farther necessity for vaccination.

It is thus obvious, from a survey of the preceding facts, that the benefits of vaccination, instead of being manifested in a universal exemption of the vaccinated from an attack of small-pox, are shown in an immense saving of human life, and in the disarming of this loathsome scourge of its terrors. Although vaccination, as well as variolous inoculation, is a discovery which attests the wonderful powers of the human mind in unfolding the secret provisions which a beneficent Nature has provided for the mitigation of her most baneful pestilences, yet the history of vaccination unfortunately proves that the sanguine anticipations of its early advocates—that Nature has thus furnished us with a means adequate for the complete extermination of small-pox from the face of the earth—are vain and illusory. But notwithstanding the results of time have shown the error of these premature assumptions, yet the benefits conferred upon the human family are sufficiently great to place the name of JENNER among its greatest benefactors—a judgment in which the physicians of all the world are unanimous. That good and evil shall be blended, is a general law of our physical and moral nature, to which the history of small-pox

and vaccination offers no exception. In a word, how unrequitable are the obligations of the human family—of countless generations yet unborn—to him who, eliciting this mysterious secret from the dark recesses of rural tradition, rendered it available to all human kind!

APPENDIX.

In these additional remarks, made since the decision of the Boylston Medical Board has been announced, it is intended to furnish some confirmatory statistical data from the Fifth Registration of England, of the deductions made in the preceding pages.

DEATHS BY SMALL-POX IN ENGLAND, AT 14 PERIODS OF LIFE, IN THE TWO SEXES, BOTH IN TOWN AND COUNTRY.

	AGES.	0-1	1-3	3-5	Under 5 years.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and upwards.	?	All Ages
a	Males,	411	603	290	1304	138	15	17	44	22	6	"	"	"	"	"	"	1546
	Females,	401	571	242	1214	150	16	13	22	9	2	"	"	"	1	"	"	1427
b	Males,	57	50	20	136	21	3	5	11	1	3	"	"	"	"	"	"	181
	Females,	48	64	29	141	21	4	4	5	2	2	"	"	"	"	"	"	179
c	Persons,				472	77	12	18	27	6	12	"	"	"	"	"	"	"
	Males,				232	39	5	11	20	2	7	"	"	"	"	"	"	"
	Females,				240	38	7	7	7	4	5	"	"	"	"	"	"	"
d	Males,	1393	2246	761	4400	1092	737	56	148	"	"	"	"	"	"	"	"	"
	Females,	1597	2285	1096	4978	847	317	113	121	"	"	"	"	"	"	"	"	"

The first two lines, marked *a*, represent the deaths, for the year 1840, by small-pox, in twenty-four town districts of England, at fourteen periods of life, in each sex.

The second, marked *b*, represents the same for 1842 for London.

The third, marked *c*, shows the number of each sex, out of 100,000 persons born in the Metropolis, dying from small-pox at twelve periods of life.

The fourth, marked *d*, shows, out of 100,000 dying in the Metropolis, the number of each sex dying from small-pox.

It is thus seen that the strongest confirmation is here afforded of the preceding results relative to the mortality, at different ages, from small-pox. The greatest mortality by far, as much, in fact, as five-sixth, occurs before the age of five years, while above the age of fifty there is but a single death; and this is in corroboration of the preceding inference, that, if, according to Dr. Gregory, there is a progressive decline of the influence of vaccinia in the human system, it is very suddenly arrested about the middle term of life.

The relative mortality in each sex from small-pox in towns and the open country, is accurately compared in the Fifth Registration for 1841. Thus:—

Cause of Death.	Males.		Females.		Total.	
	Districts of 25 Towns.	Districts of 7 Counties.	Districts of 25 Towns.	Districts of 7 Counties.	Districts of 25 Towns.	Districts of 7 Counties.
Small-pox.	790	163	685	124	1,475	287

The towns here referred to have an area of 666 square miles, and the counties of 9,532; and of inhabitants, the former has 1,883,693, and the latter, 1,700,484. Three other comparisons are made upon a much more extended scale; and the general result is as follows:—"By small-pox the mortality was twice as great in the towns as in the country districts (1045 and 507)."

These data are in confirmation of the well-known fact, that small-pox is much under the influence of causes other than those of contagion; and this same fact is also established by the following data.

It appears that the annual mortality from small-pox, in the four years, 1838–41, presents considerable fluctuation. In the following table, the first line gives the total annual deaths, and the second, the annual number of deaths to 1,000,000 living in each of the four years.

	1838.	1839.	1840.	1841.
Deaths, ...	16,268	9,131	10,434	6,368
Number to a million living,	1,101	604	678	408

An attempt is also made to exhibit the influence of the seasons upon the mortality of small-pox; but, unfortunately, these results are comparatively useless, inasmuch as they represent the four "quarters" of the year instead of the seasons. As winter certainly means the three coldest months, it should consist, instead of the first quarter of the year, of December, January, and February; for December, as a general law, has a lower mean temperature than March. The same remark applies to summer, which, for the opposite reason of a higher temperature, should begin with June instead of ending with September. Thus, as regards the influence of the seasons, a great defect is presented in the Registration of England; and these incomplete but laborious results comprehend the most elaborate tables relative to births, deaths, marriages, and diseases, extending over 324 districts.

ART. II.—*On some Diseases of the Os Uteri, and the Mode of Investigating them.* By C. R. GILMAN, M. D., Professor of Obstetrics in the College of Physicians and Surgeons, New York.

ALTHOUGH the diseases of the Os Uteri are so common that there are few practitioners who do not frequently meet with them, yet it is not to be denied that the diagnosis of these affections is not generally well understood; and consequently the treatment is often unsatisfactory, both to

practitioner and patient. This state of things is not to be attributed to the difficulties of the subject; for, with our present means of investigating the state of the os uteri, the detecting of its diseased states is easy and the diagnosis far from obscure; neither is it chargeable to any want of importance in the affections of the part, for few practitioners but are aware that they often embitter and not unfrequently shorten the lives of those who are affected with them. The true reason why these diseases are not thoroughly and familiarly understood by the mass of the profession, is that the proper investigation of them is *exceedingly disagreeable* both to the patient and the physician. It requires a certain amount of moral courage in the practitioner to propose, and a degree of right-minded intelligence in the patient to submit to, the method of examination by which alone a sound opinion can be formed.

That the sex have a natural and, while kept within certain limits, a laudable reluctance to submit to exposure of the person, every one knows; but this can and ought to be overcome, and if the necessity of the examination is fairly and fully put before the patient there will be no trouble.

That this is not oftener done is probably owing to the fact that many practitioners are not fully aware of the value of such modes of examination; not that they have never heard of them, but rather that they shut their minds against a truth which they are unwilling to believe. They have imbibed prejudices against the speculum; it is, in their minds, connected with indecencies, *French immorality, &c., &c.*; they have perhaps denounced it as improper or, it may be, as immoral, and they are unwilling to retreat. We all know how strongly prejudices and the sense of having committed themselves operated, and in certain quarters still continue to operate, against the stethoscope.

Now as the objections to the speculum are much more plausible, we need not wonder that very intelligent men, even some of the lights of the profession, restrict the use of the instrument to an exceedingly small number of cases, or perhaps proscribe it altogether.

How is this prejudice to be overcome? Plainly by bringing clearly and frequently before the eye of the profession the value of this mode of investigation, and the very satisfactory results that can be obtained by resorting to it. These considerations have induced me to devote a paper to the subject of the diseases of the os uteri, with special reference to the modes of investigating them. I have nothing very new or startling to offer to the quidnuncs of the profession; my aim is to aid in the establishment of known principles, and to increase the confidence of plain practical men in a mode of investigating and treating these diseases with which they may not be familiar.

Modes of examining the Os Uteri.—These are the touch, and the use of the speculum. On the former I have but a few words to say; upon the latter it may be advantageous to enlarge a little.

The touch; position of the patient. For the examination of the diseased os uteri, the erect is always best, as it brings the organ more completely within reach and facilitates in every way the investigation. In practising "*the touch*" none of the following points are to be neglected; upon each the practitioner must obtain definite and thorough knowledge; the size, the shape, the position of the organ, the state of its surface, whether rough or smooth, and the degree of sensibility to pressure. The facility with which these several elements of diagnosis are made out will, of course, depend upon the degree in which the practitioner is

familiar with the feel of the parts in their natural state; and here, perhaps, the younger members of the profession will permit one who is no longer young, to urge upon them the propriety of making themselves early familiar with the feel both of the vagina and rectum. If it were proper in this place to enlarge upon this subject, I could illustrate its importance by referring to some strange mistakes in diagnosis, which depended entirely upon the practitioner's not having *educated his fingers*.

As to the size and shape of the os, it is well known that they vary remarkably as the woman has or has not borne children. Varieties will also be found among individuals of each of these classes. Experience and a thorough investigation of the other features of the case will enable us to decide, whether, in any given case, the deviation should be considered morbid.

Irregularity of shape in a marked degree is morbid.

The State of the Surface.—This can be made out but imperfectly by the touch; any cleft, cavity or marked roughness should induce us to resort to the speculum. As to the *sensibility* of the os, any complaint of pain on moderately firm pressure, indicates the presence of disease; in the normal state, such pressure gives no pain whatever; if pain, therefore, is complained of on pressure, *disease exists*; the rule is, I think, without exception.

Position of the Organ.—The symptoms of simple prolapsus are well known. Upon that part of the subject I need not dwell; but it may be proper to state, that prolapsus uteri is very often a mere symptom of some other and more formidable disease. Let not the practitioner, then, content himself with having diagnosticated prolapse, and putting the woman under treatment for that alone; rather should he investigate further, and see whether it is not symptomatic of some other affection. A certain degree of prolapse accompanies almost all the congestive inflammations of the uterus; it also attends fibrous tumors of the posterior wall, polypi, &c.

Use of the Speculum—Varieties of the Instrument.—These may be arranged under the two general divisions of

1st. Those composed of two or more blades.

2d. Those composed of a single piece—a simple cylinder.

Of the bladed speculums, the one which is, I think, the most used in New York is the speculum of Weiss. The three blades, whose divergence opens the instrument, are placed conically, so that the stretching of the vulvo-vaginal orifice must be very great before the os is exposed at all, and if the latter be much enlarged, the speculum must be so far opened that the distension and pain at the vulva is excessive. This constitutes a great objection to the instrument. The same remark applies to the French three-bladed speculum, sometimes, though improperly, called Mad. Boivin's, the stretching being greatest at the vulva, where it is least wanted, and where it gives most pain. For this reason, I prefer the valvular speculum, either Ricord's or that of Charriere. Being constructed on the principle of the double valve, and the joint placed one or two inches from the vulvar end of the instrument, it is opened at the uterine extremity, by compressing that portion which is embraced by the sphincter vaginæ; in this way we get a very perfect exposure of the os and cervix, without any painful stretching at the vulva. The instrument I use, when fully opened, gives at the uterine end an expansion of nine inches circumference, while at the vulvar it is barely five. One objec-

tion applies, however, to this, and to all other speculums with branches; they are expensive, and only to be obtained of skilful instrument makers. This, of course, restricts the use of them; but we have the less reason for regret on this account, as most of the advantages of the speculum can be secured by the use of the simple cylindrical instrument. It is to these simpler and cheaper forms of the speculum that I wish particularly to direct the attention of the mass of practitioners, in the hope that, as they are within the reach of all, all may be persuaded to make trial of them.

These cylindrical speculums, made either of metal or glass, are generally like the bladed ones, very conical, and of course open to the objection of stretching the vulva painfully. It was, I believe, Mr. Fenner, of London, who first proposed the cylindrical speculum of the same size throughout. As to the material, although metal has some advantages over glass, yet the readiness with which glass cylinders can be everywhere obtained, and the facility with which they are kept clean, should, I think, make us prefer them. The instrument should not be more than five inches long; the great length of Recamier's tubular speculum is an objection to it. The diameter must vary; some cases admitting and requiring a large one, others only one of small size. Every practitioner should be provided with four sizes, the diameter to be 1 inch, 1¼ inch, 1½ inch, and 1¾ inch. Instead of the wooden plug which is commonly attached to the metallic speculum, a bit of sponge of proper size, covered with oiled silk and fastened to a handle six or eight inches long, will answer perfectly well. Any practitioner can readily make for himself a very good speculum by taking the common glass lamp chimney, coating a quarter of an inch of the lower end with wax, and fitting a handle with the sponge and oiled silk. Such an instrument, though homely in appearance, will enable the practitioner to do very well without the more elegant, more complicated, and more expensive metallic speculum.* I am very sure that if those who have never used the speculum, will only consent to make trial of the simple form of instrument which I have here recommended, in one single case of disease of the os uteri, the satisfaction they will derive from being, by its aid, enabled to substitute a rational and often positive, for the vague, conjectural, diagnosis they may have before formed, will establish this mode of investigation in their minds as one of the most valuable practical aids. When we have exposed, by means of the speculum, the os uteri to view, we often find it covered with discharge which prevents our forming an accurate notion of the state of the surface. This may sometimes be removed by a bit of lint or soft muslin tied to a stick. If, however, there is inflammation, and especially if we suspect erosion or superficial ulceration, it is best to remove the discharge by throwing, very gently, a stream of water upon the part from an India rubber bag and pipe, or from a small syringe; this will cleanse the surface without irritating it, and thus enable us to judge accurately of the color of the part.

Diseases of the Os Uteri.—Occlusion or Stricture.—Dr. Mackintosh of Edinburgh first distinctly called the attention of the profession to this malformation as a cause of disorder of the menstrual function and to dilatation as a means of cure. In some of his cases the occlusion

* For this suggestion I am indebted to my friend Moore Hoit, M. D., of this city, who made for himself a very good speculum in this way.

seemed to have been the cause of dysmenorrhœa, in others of amenorrhœa with violent symptoms, both of constitutional and local irritation. In all, very marked relief was afforded by dilating the os by bougies, the process being conducted just as a similar one is resorted to, for the cure of stricture of the urethra. Although Dr. Mackintosh's success was very remarkable, he having cured 24 out of 27 cases, and 11 of these cured, having subsequently become pregnant; yet his paper does not seem to have made any strong impression on the profession. Waller in his lectures does but allude to it, and Churchill speaks of the cures as probably not dependent on the dilatation of the stricture. I do not know that the cases have been mentioned by any other author. Now although the views of Mackintosh have been thus slighted, there are certainly some facts long known to the profession which would be very satisfactorily explained by adopting his opinions on the etiology of dysmenorrhœa. For example, every one has met with cases where child-bearing has cured dysmenorrhœa. Writers before the time of Mackintosh were content to veil their ignorance of the cause of this influence of child-bearing under vague generalities about "changing the state of the organ;" exactly what was changed or how, they did not pretend to know. Now admit the theory of Mackintosh, and all is clear and simple. Occlusion or stricture was the cause of the dysmenorrhœa; the passage of the child's head effectually removed this, and a cure of the dysmenorrhœa was the natural result. Again, we often meet with cases where women remain barren for many years, then have a child, and afterwards continue to bear children frequently and rapidly, and this without any marked change in the general health. Here the connection between the cause and effect is not so obvious; yet it would be difficult to suggest an explanation more plausible than, that the original difficulty was stricture, that under peculiarly favorable circumstances it was once overcome—that the subsequent delivery removing the obstruction, impregnation was easily and promptly effected. Influenced by these considerations, I was induced to adopt Mackintosh's practice soon after his cases fell under my notice; and the result has been so favorable, that I feel warranted in calling the attention of the profession strongly to the proposed plan of treatment.

I have resorted to this practice in both single and married women; and although in some cases the relief has not been perfect, yet in all a certain measure of improvement has resulted, and in the great majority, a perfect cure has been obtained. I will append a case or two, both to illustrate the subject and that I may incorporate into one of them, an account of the manner of performing this little operation. The whole mode of manipulating is in Mackintosh's work, but perhaps that may not be in the hands of all the readers of the Journal.

Case I. "Mary ———, an Irish servant girl, aged 25, has suffered from dysmenorrhœa ever since she began to menstruate. Has been subjected to every variety of constitutional treatment. On examination per vaginam, I found the cervix pointed, the os exceedingly small, and admitting with difficulty a probe the size of a stout knitting needle. I placed the patient in the upright position, the back against the wall of my office; then introducing the fore finger of the right hand, I made the tip of it rest upon the minute os uteri. I then passed with the left hand, a metallic bougie of the proper size up along the finger till the point of it rested upon the os; re-

taining it in this position by the finger of the right hand, I rotated it with the left, gradually and cautiously projecting it forward till it passed into the cavity; cautiously and gently, I advanced it till the point touched the fundus; of this I was aware both by the impulse communicated to my left hand and by the exclamation of the patient; after allowing it to remain for a moment, I withdrew it, rotating the shaft as before and always acting with the greatest gentleness. The operation, though it alarmed and agitated the young woman a good deal, was not at all painful, and the subsequent repetitions of it caused no trouble whatever. These repetitions to the number of three or four, were followed by a less painful lustration, and when, after a few more trials at intervals of a week, the os would admit a bougie, the size of an ordinary quill, no further trouble was experienced.

Dysmenorrhœa with Leucorrhœa.—Mrs. M——, aged 29, married eight years. Soon after her marriage she had a violent attack of acute vaginitis; and when relieved, leucorrhœal discharge was kept up, and the menstrual function was imperfectly and painfully performed. Injections checked the leucorrhœa, but it frequently returned; constitutional treatment was tried for the dysmenorrhœa without any good effect.

On examination with the speculum, the os was found small, the posterior lip somewhat enlarged and a little tender; a single scarification of the os, aided by rest and frequent cold vaginal injections, removed the inflammation in two weeks. I then attempted to pass a bougie into the cavity of the uterus; for a long time I was foiled; it passed very readily about an inch or rather less, but at that point the occlusion seemed perfect. By frequent and patient trials, I at last cleared the obstacle: the subsequent dilatation was easily and pretty speedily effected. In three months the patient was perfectly cured, menstruating freely without any considerable irritation. She passed from my care soon after this, but I have heard that she has since conceived.

It is needless to multiply cases, but I will give one more from the practice of my friend, Dr. W. C. Roberts, who has kindly favored me with it.

"J. Drynder, colored, aged 25 years. This woman began to menstruate at 13 years of age, and did so with extreme pain until the period of her marriage, after which the severity of her suffering underwent some diminution. The first day of her menstrual period always incapacitated her from the duties of her station. She had been married over two years without ever having conceived, when I had some conversation with her on the subject, and proposed to adopt Mackintosh's plan (of which I had had some previous experience), both as a means of relief to the dysmenorrhœa, and as affording a hope of future impregnation. To this she consented. With the speculum, I introduced a small conical elastic bougie into the os externum uteri; it struck immediately, at the depth of an inch, or an inch and a half, against a fleshy fundus, and could only with difficulty be made to advance to the fundus uteri. By degrees, I passed the next sized bougie, and finally one about the size of a number six catheter, with ease quite to the fundus uteri, a depth of three inches. No irritation followed any of the operations; no pain was ever experienced; and she considers now, that she obtained excellent results on terms to which she would again cheerfully submit. Eight sittings only, sufficed to allow of the complete dilatation of the os internum uteri, where I supposed the stricture to exist. The last was on the 12th of August, 1843. She menstruated twice afterwards, entirely without pain, and on

the 2d of this month, July, 1844, I delivered her, after an easy labor, of a fine boy. I do not know which is better pleased with the result, the physician or the patient; and, if a single case can prove anything, this must in every point of view be deemed conclusive."

Conjestive Inflammation of the Os Uteri.—Cases of this sort are, as I have already hinted, very commonly confounded with those of simple prolapsus: indeed, it is very difficult in any case, and in not a few quite impossible, to diagnosticate the two affections without a vaginal examination. Some, indeed, require the use of the speculum to establish the diagnosis positively. A degree of prolapsus almost always accompanies long continued congestion of the os, and is dependent on it. Some authors tell us that we can recognize prolapsus by the complete relief which the recumbent posture affords—a relief which cannot be thus obtained if congestion or inflammation exists. This is a mistake. The recumbent posture affords marked relief in all the simple inflammations of the uterus. In all such cases, then, we resort to the touch; and if this does not fully enlighten us, we use the speculum. On vaginal examination by the touch, we must expect to find the os lower down than natural; prolapsus, in fact, existing as I have before said, but only as a symptom of the congestive inflammation. If, then, with the malposition, we find the lips enlarged, hotter than the rest of the vagina; and, above all, if pressure causes pain, we may be well assured that inflammation exists. In some cases, the lips are large and yet not tender, and the increased heat is not very decidedly observable. Here the speculum is required; by its use we get a more exact idea of the size of the os and lips, and we can tell whether the color is more intensely red than in the normal state. If the organ is of a deep red, if the surface is marked with red vessels, congestive inflammation is present, and should be met by appropriate treatment. Before doing anything in the way of treatment, however, we should carefully and, if necessary, *repeatedly* examine the part with a view to ascertain whether any erosion or ulceration exists, as the treatment required for simple congestive inflammation may well be inappropriate, and perhaps injurious, if ulceration be present. First on the list of remedies for a congestive inflammation of the os, the local abstraction of blood is justly placed. This may be effected either by leeches to the part or by scarification, or where neither is practicable, which *ought* never to be the case, cups to the sacrum or leeches to the abdominal ring, may be tried; they form, however, but poor substitutes for the more direct forms of depletion. I prefer scarification. Its advantages are: *first*, it is at all times, and under all circumstances, attainable; *second*, it is easily and speedily performed; *lastly*, we avoid the danger of an awkward accident which occurred to a friend of mine, one of whose leeches crept into the cavity of the uterus; luckily, he did not attach himself there; but had he done so, and become gorged, it might have been a very difficult matter to rid the organ of the troublesome guest. Scarification gives no pain or uneasiness; I have scarified the os uteri so freely as to obtain several ounces of blood without the patient being aware of it.

Lest the manner of performing this little operation should not be familiarly known to all my readers, I would say that I use a common thumb lancet fastened to a bit of stick. With this, having brought the os full and fairly into the field of the speculum, I make long light gashes through the mucous membrane, proportioning the number of them to the

amount of blood I desire to withdraw. If a very free depletion is desirable, I *cross cut* the lips, and make the patient place herself, immediately after the operation, in the warm hip bath, injecting from time to time a little of the water into the vagina. In this way I think I have obtained from six to eight ounces, though the quantity must always be matter of conjecture. One of my patients, who usually menstruated freely, told me that she was sure she lost more than she was accustomed to part with at "her turns"—"*much more.*" It will not often be necessary to repeat the scarification sooner than a week. In the interval, the patient should keep quiet, remaining in the horizontal posture as much as possible, live low, and take one or two cooling purgatives. Rest in the recumbent posture is, in all such cases, so very important that, unless the patient will obey us in this matter, it is hardly worth our while to undertake the treatment of the case. Another very simple and yet very important adjuvant to sanguineous depletion, is the use of vaginal injections of cold water. The patient should make free use of this means of cure, injecting from eight to twelve ounces of cold water into the vagina three times a day; when employed to this extent, the remedy is one of great value. As commonly used, it is nearly or quite inert. These are all the means which are ordinarily required to control congestive inflammation. By steady perseverance in their use, more, far more, will be effected, than by the occasional and irregular use of a variety of remedies. When the case proves obstinate, the organ continuing large, hard and somewhat prolapsed, though the heat, redness, and tenderness on pressure have disappeared, a resort to counter-irritation by a perpetual blister over the sacrum will often extinguish the disease. It should be kept running two or three weeks at least. At first it may, in some cases, seem rather to aggravate the symptoms; even in such instances, however, good will often result from a continued use of this remedy. But I find these discursive notes extending beyond the limits to which I had proposed to confine myself; I must, therefore, reserve some observations on the various ulcerations of the os, and the modes of treatment, which they seem to me to require, for a future occasion.

ART. III.—*Case of Protracted Galactirrhœa.* By HORACE GREEN, M.D., of New York.

MANY instances of preternatural lactation, occurring in females, have been given by medical writers; and not a few cases are on record, where an abundant secretion of the lacteous fluid has taken place in the breasts of men, when, under peculiar circumstances, these organs have been stimulated into action.

In all cases, however, with one exception, so far as I have been able to ascertain, from an examination of the different writers on this subject, where copious lactation has been present in females of an advanced age, it has been reproduced by the repeated application of nursing children to the breasts. In the Medico-Chirurgical Review, for July, 1832, Dr. Kennedy has collected some cases of this nature, and has also appended

an interesting "account of a woman who gave suck to children from the *twenty-fifth* uninterruptedly to the *seventy-second* year of her age."

In this case of Dr. K's, the individual was not confined to the nursing of her own children; for "besides giving her breasts freely and frequently to the young ones of her neighbors, she suckled six children of her own, and eight nurslings." Undoubtedly, therefore, preternatural lactation, in this instance, was encouraged, and in a great degree kept up, by the repeated application of stimulus to the nipples, through the nursing of many children.

In the following case it will be found that copious lactation has continued for many years, in the absence of this natural stimulant of the lacteous glands.

Mrs. T. V., a highly respectable lady of this city, is at the present time forty-seven years of age. She is robust, and, with the exception of an attack of gastralgia from which, two years since, she suffered for several months, has enjoyed good health during many years. She is the mother of four children, the youngest of which is fourteen years old. She was married young, but she had no children until some two years or more after her marriage. During this period, and for some time previous to her marriage, her breasts at the return of each menstrual period, would become greatly distended, and a discharge "like water" would flow from the mouths of the lactiferous ducts.

At the usual period, after the birth of her first child, which occurred when she was about twenty years of age, there was an abundant flow of milk into the mammæ; and from that time to the present, there has been a copious, and an uninterrupted secretion of milk, during a period of nearly thirty years! Between the births of each of her children, there intervened a period of just four and a half years. Free lactation continued, after the first delivery, not only through the unimpregnated interval, but during gestation; and it was often in sufficient quantity, as she asserts, to have afforded nourishment to two children, instead of one. In order to dispose of this abundant flow of milk, her children were permitted to nurse for an unusual length of time, and they "used to follow her about the house," as she remarked, "for the breast, until they were so old, that she was obliged to whip them off to their play." After weaning each child, it became necessary, as no method employed for the purpose had any effect to check the secretion of milk, to have her "breasts drawn," until the birth of the subsequent child.

As before remarked, it is fourteen years since she gave birth to her youngest child, and she has been nine years a widow; yet, up to the present day, are her breasts supplied with milk, quite sufficient to afford full nourishment to any infant. Three years ago, I attended her oldest daughter, who, at her first confinement, gave birth to twins. One of them died soon after birth, greatly to the disappointment of the grandmother, who, had they both lived, intended to have nourished one of the grandchildren from her own breast. The surviving child, as well as another one, to which the daughter gave birth two years after her first confinement, have both, at different periods, during the temporary illness of their own mother, or in her absence, been often supplied with abundant, healthy nourishment from their grandmother's breasts!

It is well known that in deficient or disordered menstruation, as well as in diseases of the ovaria, a secretion of milk will occasionally occur when the patient is not pregnant. In the case of this lady no evidence,

whatever, of a morbid condition of the uterus, or of any of its appendages, is present.

At the end of two years, after the birth of each of her children, her catamenia re-appeared, and they continued to recur regularly until interrupted by a subsequent pregnancy. Their appearance, in like manner, occurred two years after giving birth to her youngest child; and each month, since that period, has the menstrual discharge returned, regularly, up to the present time. The only effect which the presence of the catamenia has had upon the flow of milk, has been to increase greatly this secretion for the time being. Such, indeed, has been the amount secreted, at these periods, that it has been necessary for her to have large quantities of her milk drawn off to relieve the distended glands.

At the present time, Mrs. V. is in the enjoyment of excellent health. Her person presents all the embonpoint of a young lady of eighteen; whilst the different organs of the system are, evidently, in the full and healthy exercise of all their functions.

Her condition in life being such as to render it unnecessary and undesirable to nurse the offspring of others, her greatest trouble, apparently, arises from the difficulty of disposing of the flow of milk, which still continues to be freely secreted by the mammary glands.

ART. IV.—*On the Isolated Tumor (Tubercle) of the Uterus, commonest in the posterior Wall.* By WM. C. ROBERTS, M. D.

WITH the great frequency of the fibrous tumors, improperly called by certain authors, the fleshy tubercle, every one engaged in female practice is, doubtless, fully aware. I design in the following remarks to draw attention to the fact, equally often met with, that tumors, *probably* of similar structure, exist isolatedly in different parts of the uterine parietes, and give rise to many of the symptoms of which females so commonly complain. They are frequently met with in the *anterior wall*. Lisfranc (Bull. Gen. de Ther.) mentions a case of this kind, attended with anti-version, and many more might be cited. But it is much more common to find these isolated tumors occupying the *posterior wall* of the uterus, sometimes in the cervix itself, and oftener in the body above the neck. I do not hesitate to say that the liability of the female to this particular form of disease, is neither appreciated by the profession, nor alluded to by those who have written, *ex professo*, on the diseases of females. I have mentioned the circumstance to many, even experienced practitioners, who have not been aware of its existence, and Clark, Boivin and Dugès, and Churchill, will be consulted in vain upon the subject.*

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* In Dr. Ashwell's paper, in the 1st vol. of the Guy's Hospital Reports, there are given three cases in which the tumor was thus situated, but no especial allusion is made to its frequency. CASE 30th. Patient, *æt.* 49. Duration of disease, 3 or 4 months: a hard body occupying the superior part of the cervix and lower portion of the posterior wall of the uterus, the os fissured. CASE 31st. Patient, *æt.* 25: a tumor of schirrous hardness, situated low down on the posterior cervix of the uterus.

The credit of having directed the attention of the profession to this fact, to which I hope in this article to give greater notoriety, is due to Lisfranc (Mal de l' Uterus). He observes: "A tumor is occasionally formed in the parenchyma of the uterus, *whose nature is little known, but which is deserving of attention. Its most common seat is the lower portion of the posterior wall.* A raised and rounded tumor is felt there, one half of which is imbedded in the wall of the uterus; its diameter varies from that of a 25 cent piece to that of a dollar, and the outline can be more or less distinctly felt. To the touch it has neither the softness of vesicular, nor the hardness of fibrous polypus. It is sometimes insensible; at others, more or less tender. *The rest of the organ is quite healthy.* It is difficult to determine the nature of the tumor with any precision during life. Is it carcinoma; the result of partial inflammation; a white, schirrous, indurated point; a polypus; a cyst; a cartilaginous or calcareous concretion?" To these queries, may we not add, are they not fibrous (fibro-schirrous) tumors? Ashwell evidently so considers them, grouping all under the general denomination of "hard." Lisfranc continues: "It is not necessarily fatal; by arresting the inflammation, degeneration has been prevented. Sometimes, they entirely disappear; at others, become small and indurated, and cease to affect the general health." Blundell (Obs. on Principal Dis. of Females) observes, that he possesses "a specimen which consists of a single tubercle growing from the posterior surface of the uterus, which would ultimately have troubled the patient much by bearing on the rectum and parts adjacent." The following case, extracted from the *Clinique des Hop.*, is interesting in two points of view. It furnishes, as far as a single case can go, a reply to the queries of M. Lisfranc, as to the nature of tumors thus situated, and is the only instance on record in which a tumor has been removed from the outside of the uterus, by simple excision. "A woman, aged 25, had, for 18 months, a weight in the pelvis, and near the cervix uteri, pain in the thighs, knees, and loins, with red and white discharges. M. Dupuytren discovered a *non-pediculated fibrous tumor, developed in the thickness of the posterior wall of the cervix uteri.* He decided to remove it, and seizing the tumor by its lowest part with Museux's forceps, while it was pushed downward by the finger of an assistant, introduced into the rectum, he drew it down and made a semi-elliptical incision on the anterior part of its base and a similar one at its posterior part. It was then easily detached with the handle of the knife. Its tissue was dense and *fibrous*, and it seemed at some points to approach the characters of cellular tumors; a serous fluid escaped from these points when incised. An abundant hemorrhage occurred for some hours afterwards. The patient at first appeared to do well, but gradually sunk and died in a month after the operation."

I have already observed that the nature of these isolated tumors is still *sub judice*. In a recent publication by Lisfranc, entitled "Practical Considerations on Fibrous Tumors of the Uterus, their Diagnosis, and Treatment," in the *Bull. Gen. de Therap.*, March, 1843, I find these remarks: "It is important to know whether, when rounded and circumscribed tumors are met with in the thickness of the uterine tissues, these tumors necessarily belong to fibrous bodies. For me, these rounded tumors may

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Case 32d. Patient, *æt.* 32. Duration of disease 3 years: a tumor just above, encroaching on the cervix, at the posterior part of the uterus, as large as a hen's egg; not so hard as schirrus. (Ashwell, loc. cit.)

be the result of a local hypertrophy, with induration of the uterine tissues, the consequence of inflammation." Again: "I conclude that there are, in the thickness of the uterine tissues, knobbed, uneven, hard and circumscribed indurations, which are often confounded with the fibrous bodies of that organ, whereas their point of departure is a partial hypertrophy of the uterus, which, constituted of anatomical elements susceptible of resolution, calls for a rational treatment, of which experience has often demonstrated the efficiency." I repeat that the nature of these tumors remains to be decided by future investigations, while of the reality of their existence, no doubt can reasonably be entertained. I have had no opportunity of examining one, *post mortem*. I once removed a uterus on the outer surface of which, anteriorly, was an isolated tumor, as large as a black walnut, distinctly fibrous; another, on which were two small flattened bodies, looking like cartilage and internally fibrous.

Having been, since my attention was first directed to this subject, seven years ago, constantly in the habit of examining for these tumors, in cases of uterine affections submitted to my care, I have met with so many instances, as to have been led to consider it as one of the most frequent of female diseases; and as constituting the essence of many of the so-called cases of prolapsus uteri, menorrhagia, hysteralgia, leucorrhœa, and perhaps dysmenorrhœa, which are still, although most improperly, considered as distinct diseases, *but which are oftenest only effects of some organic change*. On this subject, see Clark (Obs. on Dis. of Fem., &c., 1814), p. 2, and elsewhere: we find him saying, that "vaginal discharge is to be considered as a *symptom*, and not treated as a disease:" "either produced by *weakness of the constitution*, or by changes, the effect of natural or morbid causes, in the structure, position, or actions of the neighboring parts" (p. 31). "Examination, *per vaginam*," he says, "should always be proposed and performed whenever there is reason to believe, from the symptoms, that they depend upon any local cause." After citing the necessity for examination in cases of sore throat, presumed fistula in ano, disease of the prostate gland, he continues: "if all this be so, it is equally right for the practitioner to examine a female patient, whenever he believes (suspects) that disease is present" (p. 46). "A tumor," he says, "attached to the posterior part of the uterus, may so compress the rectum as to lead practitioners often to suspect stricture" (p. 55); and in a note, he mentions a patient, suspected of having stone, in whom a tumor projecting from the anterior part of the cervix was the cause of her symptoms. If we inquire what are the common symptoms of prolapsus uteri, we shall find Churchill, who makes no allusion to the complication, saying, "they are principally mechanical," and enumerating them as follows: "a sensation of fullness in the pelvis, weight, bearing down and dragging, strangury, *leucorrhœa*, *menorrhagia*, and dyspepsia." Now, as will presently be seen, the very same symptoms concur with the isolated tumor of the uterus, and it is, *à priori*, impossible to assert whether a case which presents them, is one of the one disease or the other. It is almost inconceivable that a tumor of any size, developed in the wall of the uterus, should not be attended with some displacement (prolapsus, anteversion, retroversion) of the organ; that it should not impair its function, excite in it a state of congestion leading to leuchorrœa and menorrhagia,* or even by altering the

* Ingleby states that he "lately saw a patient in consultation, who had a severe

course of, and compressing the natural outlet, lead to a difficulty in the exit of its natural discharge (dysmenorrhœa, mechanical). If, in cases of apparently simple prolapsus, instead of contenting himself with ascertaining that the uterus is depressed in the vagina, the examiner will pass his finger behind or before, and above the neck, to the junction of this part with the upper extremity of the vagina, he will then often detect a distinctly circumscribed enlargement, projecting more or less, according to its size (if in the posterior wall reaching nearly sometimes to the sacrum, and easiest to be felt *per anum*). I would suggest that in examining by this latter passage, he be careful not to mistake the cervix uteri for the tumor (an error which I know by experience to be easy of commission), but get fairly above it, upon the body of the tumor itself. It is needless to dilate upon the necessity of a correct diagnosis in these cases; for, if upon the presence of the tumor depend the symptoms and the displacement, as I believe they often do, it is, obviously, only upon its removal that our chance of curing the patient must depend. Hence, the necessity of invariable and careful examination in all suspicious cases. A sufficient observation has fully convinced me that there are few, in which one or other, or both of our means of exploration, can properly be dispensed with. In a clinical lecture published by Dr. Addison, we have some valuable remarks upon the subject of uterine irritation, of which he says the most frequent symptoms are irregular menstruation, tenderness of the womb on pressure, and *leucorrhœa*. Among the morbid sensations which are induced by the exalted state of the nervous system engendered by this affection, he enlarges particularly upon that abdominal neuralgia so frequently mistaken for inflammation of the peritoneum. "It must, nevertheless," he says, "be carefully remembered, *that all*, or most of the symptoms I have enumerated as emanating more immediately from the uterus itself, *may and often do result from organic changes either in the uterus*, or in the parts adjacent. When, therefore, we have the least suspicion of the existence of such causes, an examination of the patient ought, *on no account whatever*, to be neglected." Now, it is very remarkable that, entertaining such correct sentiments, Dr. A. should not once have performed any such examination in one of the cases he has recorded; but lays great stress upon the necessity of attempting the cure of the leucorrhœa which is so constant a symptom, by means of astringent washes. It is possible that a more careful investigation might have detected in the uterus the particular organic change which I have been attempting to describe, as the cause of some of the cases of abdominal and other neuralgia which he has related. But none of them were examined.—(*A. on Dis. of Females, connected with Uterine Irritation.* Lond. 1830.) A brief report of some of the cases which have occurred to myself, will make the reader acquainted with the nature and symptoms of the disease, of the reality and interest of which, his own observations will not fail soon to convince him.

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form of uterine hemorrhage, said to depend on placenta prævia: milk was freely secreted, but on examination, the symptoms were found to originate in a fibrous tumor, the size of a hen's egg, connected with the upper part of the cervix uteri. He also adds, what is so evident from a perusal of some of my cases, "that uterine *neuralgia* may frequently be traced to the influence of a fibrous tumor over a naturally irritable temperament. In one instance, the vaginal examination was not only attended by severe pain, but followed by delirium, which continued more or less for several days."—(Lect., p. 213, Am. Ed.)

Case I.—Mrs. Easter, widow, aged 43, mother of six children. Began to have pain in the womb within the last two years. Her principal complaint of pain is in the abdomen, low down in the groin, crossing the belly and settling in the hypogastric region, attended with bearing down and pressing, and a feeling that if something would come away she would be better. The pain is not constant. Sometimes it comes on in short and sudden paroxysms of great severity; sometimes lasts for hours, and sometimes for two or three days. Lying down relieves it; it is increased by lifting or straining, particularly at stool. Sometimes she is afraid to walk, owing to the bearing down in the lower part of the belly. Sitting down at all times causes pain in the left side. She has sundry dyspeptic symptoms. On examination, *per vag.*, a tumor as big as a hen's egg is felt to rise from or in the posterior wall of the cervix uteri, about half an inch above the lip of the os, having around it a distinct sulcus, by which it is circumscribed. It extends towards the left side of the patient; is elastic, rounded, and has a roughened feel on its surface, as if formed of flattened convolutions, divided by shallow sulci, but is not distinctly nodular. It is exquisitely tender, and the examination left a pain (which she describes as beating, hot, burning, dull, or numb) evidently neuralgic, to which much of the distress is doubtless owing, which lasted some time.* In all other respects the uterus appears healthy; it is rather low, and the neck is tilted forwards towards the pubis. Such was the history of the case some months ago. The symptoms still continue, but I have made no recent examination, nor has any treatment been submitted to.

Case II.—Mrs. Derest, aged 24. Seen July 28, 1837. Enjoyed good health previous to her marriage, four years ago, and never since. Had two miscarriages: no living children. Has been suffering much for some months. Pulse one hundred and tense: bowels costive, urine stringy and passed with pain. The inguinal and hypogastric regions are very painful on pressure, but no tumor can be felt from without. There is a good deal of pain in the back, a sensation of bearing down, and of something obstructing the rectum and the evacuation of fœces, and occasional paroxysms of dreadful pain, lasting for hours. On examination, the uterus was found prolapsed, its os and cervix quite healthy. On passing the finger behind the cervix, and upwards towards the left side (that which is the most painful), a hard, knobbed enlargement is to be perceived; and, *per anum*, a large tumor can be felt, occupying the hollow of the sacrum, and pressing towards each other the walls of the rectum. The body of the uterus seems enlarged. The examination was followed by severe pain, which lasted several hours. The woman was a patient of Dr. Jas. B. Kissam's. Of the subsequent events of the case, I know nothing, except that she took Iodine, and I heard lately that she was still living, and in better health. Since the above was written, I found the following memoranda relating to the patient among my papers. Nov. 26, 1840.—After taking 3 oz. Sol. Iod., considered herself well for a period of two and a half years. The symptoms (the same as before) are again as bad as ever. The extreme tenderness of

* The connection between hysteralgia and fibrous tumors of the uterus, has been ably pointed out by Ingleby (Lect., p. 204). He has known of four cases thus caused. In a case of small hard tumor of the upper part of the cervix, extreme tenderness of the vagina was a marked symptom.

the posterior lip of the uterus renders the examination of the tumor difficult, but it is certainly smaller than formerly. The anterior lower portion of the body of the uterus is enlarged, irregular, in parts harder than in others, and exquisitely tender to the touch; towards its left side it is pretty distinctly circumscribed as a tumor, but accuracy of examination is forbidden by the pain which is caused by the touch. Jan. 1, 1841.—Much relief from the use of Iod. Hydrarg. August, 1844.—No examination since. Health perfectly good.

Case III.—H. Green, light mulatto, aged 28 years; seen 9th July, 1837. Married 12 years: two children by her first husband, none by her second—none for several years past. Is stout and active, menstruates regularly but scantily, urinates freely as to quantity, but has occasionally extreme pain at the end of the urethra, after the evacuation, causing her to shed tears even. Has also pain in the loins. The belly is not tender, and no tumor can be felt in it. The cervix uteri is hard and stiff, and is, as it were, tilted up towards the opposite side from the tumor. The outer surfaces of the lips of the os are rough, hard, and irregular; and the os itself has the shape of an *S*. (The speculum was not used.) The finger, *in ano*, encounters a large tumor springing from the posterior surface of the uterus, just above the cervix, which is hard and irregular, but does not block up the rectum as much as in the preceding case. There are some circumstances connected with this case which are highly interesting, in the history of the disease. The tumor *disappeared* very rapidly under the use of iodine, not a vestige of it being left, and for some years I considered the cure as complete. About a year ago I obtained permission to examine the uterus, and was much pained to find that a tumor of some size occupied the site of the former one; in other words, *that it was growing again*. As no complaint was made at the time, I said nothing about it; but on the 12th of March last, was again consulted, for a return of the old symptoms. A very considerable tumor now occupies the posterior surface of the uterus, reaching towards the sacrum, having a flattened feel, its lower edge rather sharp, tolerably smooth, and rather painful. The function of the uterus is not impaired. Further to increase the probability that these tumors belong to the fibrous variety, a very distinct one is to be felt in the right groin, tender, nearly as large as an egg, and apparently attached to the organ. This latter tumor is much less painful to the touch since leeches were applied over it. *The disappearance and subsequent return of the disease* are further exemplified in case 4th.

Case IV.—Mary Stevens, colored, aged about 30, married 12 years, and mother of two children, consulted me for pain in utero, prolapsus, and scantiness of the catamenia, Sept., 1837. The lower portion of the posterior wall of the uterus was then swollen and tender. In October, there existed a tumor of considerable size, which, on the 28th November, was recognized by my friend, Dr. G. W. Hodgson, now of White Plains. *Per rectum*, it could be felt to consist of two rounded portions, as large as walnuts, divided by a central sulcus, and very tender. Under the use of iodine, they became smaller, softer, and more circumscribed, and could be pushed up with the uterus into the abdomen. She complained of pain, weight, and leucorrhœa. On the 1st of May, 1838, the tumor was as large as a walnut, softer, and smooth. During the next six months, it rapidly increased in size, being nearly as large as a small orange. On the 28th March, 1839, she called, stating herself to be some months advanced in

pregnancy, and, to my surprise, *I could not discover the tumor.** She was delivered easily, in due time, of a living child. Some months afterwards, on examining her again, I felt the tumor, elastic, as large as a walnut, of circular shape, very tender on pressure, and occupying its original site. There was a great degree of prolapsus; about this time she was examined by Doctor (now Professor) Gilman. The tumor increased, and is now of considerable size, and causing a good deal of uneasiness, but of late has not appeared to enlarge. A year ago, when a patient of the Northern Dispensary, for dysmenorrhœa, which appeared to subside under the use of the bougie, she was several times examined by my able and zealous colleague, Dr. James Crane, Jun.

The symptoms which *may* arise from the disease now under consideration, are further illustrated by the following:

Case V.—Mrs. Sands, mulatto, aged 20, small and delicate; had been married six weeks. On 19th December, 1839, was exposed to cold: on the 20th, menstruated, as she had always done, with pain, which continued severe until the evening of the 23d, when it abated under the use of anodynes. On the 25th the pain recurred, and she vomited up everything she took. On the next day, general peritonitis existed in a well-marked form, and yielded to the usual treatment. The digestive organs continued to be disordered for some time afterwards, and occasional attacks of pain and tenesmus occurred. On the 18th January she began to complain of a return of the old pain, recurring at frequent intervals, at times distressingly severe. On these occasions she walked about her room, bent double, and almost delirious with agony. I now made a vaginal examination. The uterus was very much prolapsed, the neck tilted forwards, thick and firm, and the os gaping. A large round tumor, springing from the posterior wall just above the cervix, as large as a small orange, of uniform smoothness, hard, and very painful on pressure, occupies the vagina and encroaches considerably upon the rectum. The examination caused pain. The pubic region was tender. She had no particular difficulty in urinating, or in defecation, but had long been annoyed by an inclination to expel something from the rectum; otherwise, previous to her marriage, she had had good health. Every evening, from the date of the examination, until the 28th, she was attacked, about 5, P. M., with excruciating pain in the abdomen, beginning in the groins, during which she tossed about in bed in all directions, imploring the administration of her anodyne (McMunn's El. Op.), which invariably speedily relieved. The tumor soon disappeared under the use of iodyne, but what has been her condition since I have had no opportunity of determining.

Case VI.—Mrs. Rankins, *æt.* 30, married 5 years: mother of two children, visited Mar. 4, 1840. Her husband had been absent for thirteen months; immediately on his return, she was attacked with excessive pain in the uterus (having previously enjoyed good health), followed by symptoms of peritoneal inflammation, requiring depletion and anodynes. On the subsidence of the more serious symptoms, she lay in a languid, suffering and highly nervous state until the 1st July, when on a vaginal examination the uterus was found prolapsed, and a tumor was detected, circumscribed and as large as a lady apple, on the posterior wall of the

* A case of spontaneous disappearance of two large fibrous tumors is to be found in the first volume of "Clark on the Diseases of Females," 1814, 1st ed., p. 250.

uterus, and toward its right side. It had the usual elastic feel, and was very painful on pressure, appeared as if lobulated externally, and was very distinct per rectum.

Case VII.—Mrs. Johnson, aged 36, mother of one child, applied to me about one year ago, for certain uneasy sensations about the back, hypogastrium, &c., which led to the discovery of an enlargement in the posterior part of the uterus, of some size, but the particulars of which I cannot recall to my memory. Subsequently she disclosed a large fluctuating tumor upon the right loin, which, on being opened, contained a thin purulent fluid derived from carious bone beneath. The fistula still discharges, and I regret to add that a similar tumor, as large as my two fists, now exists in the left groin and is rapidly enlarging. Notwithstanding, her general health is good. The tumor of the uterus, examined this day, Aug. 3, has lost much of its original circumscribed character, and feels more like a general enlargement of the posterior surface of the organ, increasing in thickness as it ascends, hard, not very irregular, and excessively tender, so as to render the examination difficult. It arises from about half an inch above the os, the portion of neck which is sound not being tender; the uterus is low, its anterior surface healthy. It does not interfere with defecation; menstruation is easy and regular, but scanty; leucorrhœa habitual, and coitus so painful as to be allowed only with the greatest reluctance. The examination, as well as it, lead to aching pain afterward, from hip to hip and through the body. There is pain in the back and belly, and the least jar in walking causes her to scream out. Some of this may be due, however, to the caries which exists in the pelvic bones. She has taken a good deal of iodine at irregular intervals, to which, perhaps, the change in the tumor may be owing. Several more cases have come under my observation in private practice; two or three such were seen by myself and Dr. Crane in the Northern Dispensary, and the latter also saw a case in private practice. Prof. Gilman has also met with and treated such an one, successfully. As I am not writing a history, but a sketch only of the affection, I shall leave the symptoms to be inferred from the cases which I have now related, remarking only that they present nothing pathognomonic, but are the common expression of several uterine affections. That each may exist separately and from other causes, I well know, but I leave it to the profession to decide, how far, when they coincide, they are to be considered as in the relation of cause and effect, and how far the removal of the tumor demands our especial attention. The neuralgic character of the pain with which they are apt to be associated, merits a passing notice, not less than their frequency, the uncertainty of their nature, their tendency to remain stationary, to grow slowly, or rapidly, to disappear and spontaneously to return, *their peculiar predilection for the posterior wall of the uterus*, their innocuousness to life, and their insidious development, until revealed under the influences of some stimulus, of which matrimony and the renewal of coitus are conspicuous. Of the causes of the disease I know nothing; for the prognosis, I refer to the quotation from Lisfranc, and leave the diagnosis to the tact and judgment of the reader. A very few words respecting the treatment.

The only remedy for these tumors on which any reliance can, in the present state of our knowledge, be placed, is iodine. The authority upon the subject, is Dr. Ashwell. In his paper on the use of this medicine, in cases of "hard tumors of the uterus," he observes, that "in the walls

of the uterus, which are not glandular, iodine has generally only accomplished a certain amount of good; it has restrained the activity of the disease, confining its bulk within the limits it had obtained prior to its being exhibited. I have watched some of these cases of large, hard tumors of the uterus, for two years since the remedy has been discontinued, and as yet there has been no augmentation of the growth, no renewed activity of the morbid process." In the first of his cases, a tumor as large as the adult head, became, between the months of Jan. and April, diminished in size to that of a large orange; it was softer, and its lobulated feel more distinct and positive. In his fifth case, the tumors of the cervix had disappeared in eight months, and no further enlargement of the larger ones had occurred at the end of two years. In his seventh case, a similar result was obtained at the expiration of three and a half years. In one of Baron's cases, total disappearance, and in the other, great reduction of large uterine tumors resulted, and a Dr. Thetford* has related a similarly successful example. These, with some cases seen by myself, corroborate Dr. Ashwell's inference, that "total disappearance of tumors developed in the walls of the uterus, is not (always) to be expected," but that "restraint of the lesion within its present limits and the improvement of the general health, may be anticipated, and will be the extent of the benefit derived." To the same effect we have the testimony of Dr. Ingleby. "The larger and firmer class of tumors, fibro-cartilaginous, nodulated and multiform, are not susceptible of discussion, and it is vain to make the attempt; but I am quite certain that fibrous tumors, which could be distinguished so plainly as to leave no possible doubt of their existence, have entirely disappeared under remedies which act in a peculiar manner upon the absorbent system." In the paper of Lisfranc which I have cited, mention is made of a hard, knobbed, round, circumscribed tumor in the *anterior* wall of the uterus, which was cured by the use of hemlock pills, and Iod. Potass. internally, and frictions externally every night to the groins, of an ointment consisting of pure axunge 30 grammes, 4 grammes of the Iod. Plumb., and 3 decigrammes of Ext. gummos. opii. In another case, one as large as a pigeon's egg, round, hard, and completely immovable, unequal on the surface, *in the anterior wall*, was cured by similar means in one year. Several, in a third case, felt *per vaginam*, were cured by the Iod. Potass. in five months; another as large as a chestnut, occupying the *posterior* part of the body, was cured by it in six months. Even if in doubt as to its nature, we are advised by this author, to treat the tumor as if it were an engorgement; for, says he, even if it be a fibrous body, the same treatment would be indicated, and would have, besides, the chance of *retarding the development of the abnormal fibrous body and keeping it stationary*, by diminishing the excess of vitality and nutritive movement which presides over its evolution, and favors its increase. Of this apparent effect, he relates a case, saying, "is it not evident, in fact, that to this treatment we are indebted for having kept the fibrous body stationary during thirteen years, and which might have remained so much longer, the anatomical condition of the womb being found at the autopsy, in the best possible condition?"

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* "Patient *æt.* 40. Had an attack of constipation, which had nearly proved fatal. Micturition by drops with extreme pain; tenderness and pain in pubic regions, with sensitiveness of bones. Vagina occupied by a hard tumor; os uteri enlarged, and a large osseous (Qu. ?) tumor felt beyond it."

"The most marked curative effect," continues Ashwell, "however, of the iodine, is on structural changes of the os and cervix, which seldom continue long without undergoing alterations of condition. Here, then, it is that iodine is particularly valuable, *hard tumors of the cervix and posterior wall*, and indurated puckering of the os, *may be melted down and cured by iodine*." In every case which he has given, the morbid conditions of the os and cervix were removed. In his second case, between the 2d June and beginning of August, all appearance of the tumor was gone. In his third case, in little more than one month, no vestige of it remained. In his first case, an examination was instituted at the end of six weeks; the tumor on the posterior wall of the uterus had disappeared. "I am convinced," he says, "that the positions I have attempted to establish, are essentially true; they will be increasingly confirmed by the reiterated employment of the remedy." "I have myself," says Ingleby, in corroboration of this remark, "had reason to attribute the diminution, and even the disappearance of small fibrous tumors, for the most part to the effects of iodine; and in persons of unimpaired health, it ought to be tried." But he thinks that its protracted employment may do harm in feeble habits, and in them, he advises only its external application. I have tried it much, but have seen no bad effects to result from its use. The prophecy which I have cited from Ashwell has been confirmed by my own experience. Not only have I under my observation, patients in whom tumors of the uterus of considerable size have diminished, or have undergone no increase in several years, but in three of the cases I have given, the tumor of the posterior wall has disappeared under its use, and my friend, Dr. Gilman, has been equally fortunate.* H. Green, case third, commenced the use of iodine on the 10th Aug., and by the 1st Oct., the tumor was gone. The fact of its subsequent return I have already stated. Mrs. Sands commenced using it (Lugol's solution), in doses of ten drops daily, on the 28th Jan. and increased the dose to sixteen drops three times a day. On the 28th Feb., no vestige of the tumor remained. The prolapsus continued and a small, hard, flattened surface, from which the tumor had projected, could be felt on the posterior surface of the uterus. She continued well on the 23d Oct., 1840, since which I have not seen her. In the case of Mrs. Rankins, who was visited on the 4th March, although the treatment with iodine com-

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* Professor Gilman has, at my request, kindly furnished me with the following statement. "Oct. 21, 1843, saw Mrs. F., aged 27, married five years, without children. Her menstrual function has always been irregular. She is now suffering from extreme pain in the uterine region, occurring in paroxysms, aggravated by motion, or the upright posture. When the pain is most severe, the stomach sympathizes and there is considerable nausea. On examination *per vag.*, I discovered a tumor about the size of a nutmeg, occupying the posterior wall of the cervix and extending somewhat up upon the body of the uterus, a form of disease with which previous cases had made me quite familiar; it was firm though not of stony hardness, not tender on pressure, round and uniform in shape. After removing the excessive irritation of the uterine organs by the external and internal use of narcotics, I ordered Lugol's solution, at first in doses of ten drops, three times a day; in two weeks time it was increased to fifteen, which she continued for six weeks longer.

There was no return of the violent irritation, and by vaginal examination I found that the tumor was diminishing. At the end of ten weeks it had entirely disappeared. The general health was much improved, and menstruation was performed with less irritation than for many years previously."

29 *Green Street, August* 8, 1844.

menced at a much later period, no vestige of the tumor remained on the 17th Dec. following; her health was then excellent, and so I believe it has since continued. A certain amount of benefit also followed its use in other of the cases which have occurred to me. No remedy hitherto used has furnished anything like the proportion of success which has followed the use of iodine in the treatment of uterine tumors; and if, as certainly happens, it fail occasionally, it does but share this want of success, as Dr. Ashwell remarks, with all our most valuable remedies.

Dr. Ashwell does not allow the use of iodine, in his hands, empirically to supersede the use of occasional cupping on the loins, a mild, unstimulating, or milk diet, gentle aperients, narcotic injections into the vagina, and the warm hip bath three times a week. To none of these plans, except the regulation of the bowels and diet, have I resorted. Protracted recumbency (especially, as advised by Gooch, in the hysteralgic cases) may be useful. I have not found it indispensable. Ingleby indeed observes that, "exercise, when the tumors are not in a state of inflammation and when not productive of pain, ought not to be neglected." The fact that one of my patients began to suffer from her previously indolent disease, within six weeks after marriage, and another on the return of her husband after thirteen months' absence, proves incontestibly 'the importance of entire abstinence,' insisted on by Ashwell, from sexual intercourse, during the treatment of these structural lesions. Another method employed by Dr. Ashwell, conjointly with its internal exhibition, is the application of iodine in the form of Lugol's ointment (℞ Iodine gr. xv. Pot. Hydriod. ℈ij. Ung. Cet. ℥iss) to the tumor itself, a portion the size of a small nutmeg being introduced by the finger, or a sponge, upon a slender piece of cane, or a camel's hair pencil into the vagina, and rubbed upon the affected cervix every night, for ten minutes. From the only trial I have ever made of this method, I should say that it was almost impracticable to get the ointment up so far as the tumor, before it was dissolved by the heat of the vagina. Frictions of iodine ointment, or ointments containing some of its salts, upon the abdomen, or into the thighs or groins, may be employed with some additional prospect of advantage. I have occasionally seen the iodine produce vertigo and headache; generally it was well borne and no unpleasant effects have attended its use. The preparation employed by Dr. Ashwell is the julepum, and in one case the tincture, in doses of 1 oz. of the former and 5 drops of the latter in sweetened water, three times a day. I have used nothing but Lugol's solution, of which, I think, it will seldom be necessary to exceed 15 drops, three times a day. The shortest time in which any patient has hitherto been cured is one month; the longest, a little more than one year. Dr. Ashwell states the average time as from eight to sixteen weeks. We should, then, steadily persevere in our efforts, so long as the inconveniences attending the disease continue, while it appears lessening in size, or until it is evidently no longer influenced by the medicine. In the cases in which it is to act favorably, its beneficial influence appears to be speedily exerted. I conclude these remarks on treatment with the observation of Ingleby, "that it is scarcely needful to add, that co-existing discharges must be moderated, inflammation of the tumor or uterus abated, pain assuaged, and purulent collections, when accessible, evacuated by suitable means."

I venture to believe that the disease to which I have now endeavored to attract the attention of the reader, and which has not hitherto received

the attention which it merits, will be found to be as I describe it; of very frequent occurrence, and constituting the essential cause of many of the symptoms of which women so frequently complain. It is, too, in a considerable number of cases, amenable to treatment; its nature is as yet undecided; these are considerations which invest the study of it with great interest. I am so convinced of the truth of what I have here stated, that I have the confidence to hope that the light which will hereafter be shed on this subject, by the researches of those to whom these remarks may attain, will contribute materially to the alleviation of the sufferings of that sex, in whose welfare every right-minded man and every benevolent physician, must take a warm interest; and that a new ray will be thrown upon the true pathology of some of their ailments. "If," says Dr. Addison, in the lecture I have quoted, "gentlemen, you really require an apology for detaining you so long, I find ample material for that apology in the lively interest we must all feel in the comfort and happiness of the other sex, doomed as they are, both by the decrees of Providence, and by human institutions, to drink deep of the bitter cup of suffering. Whatever may be *her* lot in this world, we, as men, must at least acknowledge that whilst Infinite Power gave us being, Infinite Mercy gave us Woman."

References.—For the convenience of the reader who may desire to consult the original works which I have cited, I append their titles. Ashwell; Guy's Hosp. Rep., vol. i., 1836, p. 136; Thetford; Trans. of Dub. Coll. of Phys. and Surg., vol. v.; Lisfranc; Dis. of Uterus., Amer. Transl., p. 376; do. in Bullet. Gen. de Therap., March, 1843; Ingleby's Clin. Lect. on Fibrous Tumor of the Uterus, Phil., 1841; Baron. Med. Chir. Rev., July, 1839; Waller's Lect., Phil., 1841, p. 74; a tumor as large as a pullet's egg on the posterior surface of the womb, which remained stationary; Dupuytren; Clin. des Hop., April 10, 1828.

New York, Aug. 4, 1844.

ART. V.—*Closure of the Urethra from Injury of the Perineum. The Urine discharged through an artificial Opening above the Pubes; the natural Passage restored by an Operation.* By GURDON BUCK, M.D., Surgeon to the New York Hospital.

SILAS BLUNT, cabin-boy, of small size and sallow complexion, aged 14 years, born in North Carolina, was admitted into the New York Hospital, October 12, 1843, with closure of the urethra and a fistulous opening above the pubes, through which he discharged his urine.

In the month of June preceding he had fallen, with his legs astraddle, upon the edge of an empty flour-barrel. No external wound was produced, but swelling and ecchymosis of the perineum followed, with slight hemorrhage from the urethra and complete retention of urine. Thirty-six hours after the accident the bladder was punctured above the pubes, and a quart of urine stained with blood was drawn off. The opening, which is still maintained, is situated in the median line, more than an inch above the pubes. Since the injury no urine has flowed from the natural passage, and the attempts to restore it have been ineffec-

tual. With the exception of a knotted induration around the membranous portion of the urethra, the perineum is supple and sound. The orifice of the fistulous opening pouts out and is disposed to scab over; the tissues through which it passes are thickened and hard, and the surrounding surface red. The catheter used by the patient is one of his own fabric, made from the small end of a common reed, shaved down to the size of a goose-quill, and is six inches in length. He is obliged to resort to it at least once in three hours, and sometimes as often as once an hour in the day time, and once or twice in the course of the night. When introduced, the instrument inclines a little upward towards the umbilicus. The bladder was ascertained, by examination per rectum, to be habitually distended with the residuary urine that could not be discharged through the elevated artificial opening. A catheter, introduced into the urethra, passed over a callous fold of the lining membrane before it reached the closed portion.

When admitted, the patient was suffering from a relapse of tertian intermittent, which was cured by the sulphate of quinine. One month elapsed before an operation was resorted to, during which cautious efforts were made to penetrate the closed passage.

A small-sized conical gum-elastic bougie was first used, but it could not be engaged in the contracted canal. A straight steel sound was next tried, with moderate force cautiously employed, but without effect. At length, on the 13th of November, the following operation was performed. The patient being secured as in the operation of lithotomy, and a full sized catheter passed down to the closed portion of the urethra, and held steadily in that position, an incision was made in the perineum, along the raphe, of nearly two inches in length, opening into the urethra so as to expose the end of the instrument. A steel sound was then introduced above the pubes into the bladder by the artificial opening, and, with the aid of the finger in the rectum, the end of it was brought forwards, and made to press against the closed portion from behind. The catheter was then withdrawn, and, with a narrow pointed scalpel, the closed portion was divided from before backwards, the end of the steel sound serving as a guide to direct the track of the incision. A full-sized catheter was at length passed into the bladder, and a large quantity of residuary urine drawn off, though he had made water just before the operation.

A compress was placed over the perineum, and secured by a T bandage, to which the catheter was attached by threads passing through the rings.

November 14.—Patient passed a comfortable night; the urine is discharged through the catheter; has had chills this morning, followed by considerable fever; the left half of the scrotum is red and œdematous; pulse 112, respiration hurried, tongue clean. ℞. Spirit. Mindereri, ʒss. every two hours.

Nov. 15.—Swelling and œdematous thickening of the scrotum increased. Punctured the scrotum in various places with a lancet; continue lotion of acetate of lead, gr. viii., tinc. of opium, ʒi., Water, ʒviij.

Nov. 16.—Removed the catheter, and, after cleaning it, replaced it without difficulty; general symptoms favorable; pulse 96; scrotum the same; eight leeches to be applied to it.

Nov. 18.—A small quantity of urine escaped from the wound at stool, but none from above the pubes; catheter again removed; calcareous in-

crustation was found around the eyes, on the upper surface; replaced with facility; scrotum somewhat improved; poultice is applied.

Nov. 20.—The swelling and tension of the scrotum have increased, especially at the lower part; urine has escaped from above the pubes as well as from the wound in the perineum. To prevent sloughing, a free incision, two inches in length, was made on either side of the raphe into the cellular tissue of the scrotum, which presented a buff jelly-like appearance, from infiltrated lymph.

Nov. 22.—The swelling and tension of the scrotum are diminishing; the penis and prepuce are swollen and œdematous, apparently from irritation caused by the pressure of the instrument, which had been secured too tightly in the bladder; and, as it became obstructed, it had allowed the urine to accumulate and escape above the pubes and from the perineum. Patient has been chilly, and an erysipelatous blush has appeared upon the nates. ℞. Opiated Saturnine lotion.

Nov. 30.—All swelling and induration of the scrotum and penis have subsided, and the parts have resumed their natural condition without sloughing. The urine has passed exclusively by the catheter the last four or five days. The wound in the perineum is contracting.

December 15.—The opening above the pubes has closed; the wound in the perineum is gradually filling up and contracting. Patient wears the catheter constantly, and he is allowed to walk about.

Dec. 30.—The wound in the perineum having nearly healed up, the catheter was left out for twenty-four hours, during which time the patient passed his urine easily, and could retain it the full time, though, in the intervals, some would escape in drops. Passed the night also without being obliged to get up, but found the urine had escaped by drops, as during the day. On attempting to introduce the catheter, the urethra was found to have contracted, so that an instrument two sizes smaller had to be resorted to; and it was directed to be worn constantly awhile longer as before.

January 12.—For some time patient has worn a full-sized catheter at night only, and he is now able to retain his urine the full time without dribbling. The wound in the perineum is healed. On taking his discharge, he was directed to continue the use of the catheter at night, in the same manner, for three or four weeks; after which, to wear it an hour only at bed-time as much longer, then to introduce it simply once in twenty-four hours, and afterwards two or three times a week.

Remarks.—In the above case, as has been my practice in similar cases, the catheter was not disturbed till the third day after the operation, at which time, inflammation had agglutinated the layers of the divided tissues, and shut off the openings in which the end of the instrument might become engaged in replacing it.

The parts have also moulded themselves and acquired a degree of firmness, so that, in returning the catheter, it passes easily through them into the bladder. After the first removal, the catheter may be changed every day or two, as the case requires. Special care should be taken to attach it loosely to the T bandage, so that there may be no pressure inwardly where the instrument begins to curve. My experience, thus far, leads me to prefer decidedly a silver catheter to a flexible one, as giving more steadiness and support to the parts.

ART. VI.—*The Spontaneous Cure of Phthisis, and the successful Application of Electro-Galvanism in Amenorrhœa.* By CLARKSON T. COLLINS, M. D., of New York.

CASE I.—It is my belief that there are many more cases of phthisis pulmonalis cured by nature alone than medical men are generally aware of. I do not mean to say that we should always trust to nature alone, by any means, but that we should be very cautious lest we do too much. The case that I am about to relate came under my care the 29th day of March last. Sarah Hamor, æt. 55, born in England, had always been rather delicate. She was attacked last fall with erysipelas of the left hand and arm; and after recovering from that, she caught a severe cold, which was followed by a troublesome cough, and shooting pains through the chest, but more especially on the right side, from the right mamma to the shoulder blade of the same side. She now began to lose flesh; and when I first saw her (which was as above stated) she was so much emaciated, to use a common phrase, that she was a mere skeleton. She was so weak, at that time, that she was unable to help herself; she had profuse night sweats, severe cough, and expectorated about half a pint or more of light greyish yellow pus of a frothy nature (same as usually seen in the last stages of consumption) in the course of twenty-four hours. Her shoulders were raised and brought forward; the chest flat, and the clavicles very prominent, leaving a hollow. On auscultation there was that peculiar hollow gurgling sound, at times, heard over the right lung; and, at others, there was no sound to be heard of respiration at some points. The dyspnœa sometimes became so urgent that the friends several times thought her dying. Almost as soon as she fell asleep, she would break out in a profuse perspiration, and the little sleep she did get was not refreshing. There was an abscess on the right side of the spine, extending from about the second rib to the ninth or tenth, and about four inches wide, involving all the muscles of the back contained within that space. There was an opening about an inch and a half from the spine, over the region between the fifth and sixth ribs, which I enlarged by means of a bistoury, and kept open by the use of poultices. The abscess discharged constantly, and at one time nearly a pint of well marked pus. When I was first called, I told the friends that I thought she could live but a very short time, which conclusion, I was informed, all parties concerned had come to before having her brought into town.

She had been brought over the river from Wallabout, L. I., the same day that I first saw her—it being her desire to be at her friend's house, in this city, when her spirit should take its flight. My great object in her case was to palliate her sufferings, and merely make her as comfortable as possible during the time she might live. I told her friends to let her eat as much as she wanted, and anything in the way of ordinary food; also to let her have a small quantity of wine. Ordered the following mixture to be given at night, and at any time during the day when the cough was most troublesome: R. Gum Acacia, Ext. Glycyrrhiz. ā ā ℥j., Syr. Althea. Tinct. Opii. ā ā ℥ss., Vin. Antimo. gtt. x. and Aqua pura ℥iii. Dose, cochlea magn. I visited my patient daily, expecting every visit to be the last, for about a fortnight, when I was convinced that she was no worse: her night sweats began to decrease, and she got more refreshing sleep; her appetite seemed very good, and in fact it was rather voracious, and her cough was easier. The discharge from her back

began to diminish, and at the end of four weeks was quite healed up. Her cough had nearly left her at that time, and she began to gain flesh. In about four weeks from the time I first saw her, her cough had entirely left her, and she was gaining strength fast. The only thing that she now complained of was pain about the right side, and a "falling in," as she said, of the right side of the chest, which she had observed during the whole course of treatment. The right side became much smaller than the left, owing to the chest's shaping itself to the new condition of the lung. In about six weeks from the time I first saw her she left town for Poughkeepsie, in better health, she said, than she had enjoyed for years. I gave her nothing of any importance beside cough mixtures, similar to the one first ordered.

There is certainly something very singular in this case, and some may be led to believe that there were no tubercles in the lungs, the affirmative of which I have every reason to believe, for I never saw a plainer marked case. The left lung seemed, from the first, not to be diseased.

Case II.—U. W., æt. 35, unmarried, rather delicate constitution; her menses were stopped by taking cold, some seven months before I first saw her. I tried all the usual remedies prescribed in such cases, but I did not succeed in bringing about the desired effect. I had been using the Electro-Magnetic machine in some other cases with the happiest effects; and I therefore was induced to use it in this case, in which it succeeded most perfectly. I applied the buttons connected with the machine over the region of the womb, holding one on the lumbar region of the spine, and the other in front over the pubic region; using the negative and positive wires alternately to the spine and abdomen. I continued the remedy five days, from five to ten minutes each day, when her menses were fully re-established. I have used it in Rheumatism with good effect.

Art. VII.—*Cases of Sore Throat, terminating in Tubular Effusion in the Bronchial Tubes, with Croupy Cough.* By A. V. Williams, M.D., of New York.

Case I.—In the month of August last, I was called to see a child that had been subject to frequent attacks of croup, from which circumstance the mother was not only familiar with the most prominent symptoms of the disease, but also with the treatment required in its forming stage. She announced to me, however, on the present occasion, that there was something about this case different from the former attack, to which this child, as well as two others, had been subject, and particularly in its not yielding to the kind of treatment which she had pursued in former cases with success, viz., a brisk emetic, a calomel cathartic, leeches, &c.

The child had been ill two days when I was called to see it. I found him laboring under a cough which was husky and hoarse, and almost constant; the breathing laborious and wheezing as in asthma; the voice whispering and hoarse; skin cool; pulse rapid; intellect clear. The chest emitted a dull sound on percussion, and the mucous rale was percep-

tible to the ear, on applying it to the chest. The child had been freely vomited and purged, as stated above, without any relief; and it now presented all the appearances of a child laboring under the membranous stage of croup. From the peculiarity of its voice, I was induced to look into the throat (as indeed is my uniform custom when called to a case of croup), when I discovered the tonsils speckled over with apthous spots; and the posterior part of the throat covered over with a thick layer of the color of the buffy coat of inflamed blood; and this appearance extended down as far as the eye could see.

Calomel and ipecac. were given every two hours; and the throat was cleared from phlegm as it accumulated, by emetics, a variety of which was used, such as Cox's hive syrup, sulp. zinci, polygala senega, &c., whilst a blister was applied to the throat, and another to the chest. One bleeding from the arm was also made, but without any good effect; and various topical applications were made to the throat, but without any benefit, such as nit. argenti, and others. The child died two days after I first saw it, and four days after the croupy symptoms first made their appearance; although I afterwards learned that the child had been subject to a cough ever since it had been ill with the influenza, which had prevailed in the month of June. I very much regretted that a professional engagement prevented my making an autopsical examination of the body, so as to verify the true nature of the disease. An unfortunate case, however, a few weeks subsequently, afforded this opportunity, in the same family, in the next oldest child, aged 6 years; the subject in the former case being 3½ years old.

Case II.—Ann J., aged 6 years, the sister of the little boy, whose case is given above, was attacked with hoarseness and cough, accompanied by slight difficulty in swallowing. These symptoms progressed, and the parents becoming alarmed from the likeness of this to the former case, I was sent for; and I found the child with a quick pulse, and skin not heated, although the mother stated that there had been high fever during the night. The cough was not incessant as in the former case, but was hoarse and croupy; the throat, on examination, was found covered with yellow matter precisely as in the first case. This child complained of some pain in the chest. I applied leeches to the throat and drew blood by means of cups from between the shoulders; a blister was applied to the throat, and another to the chest. The most prominent symptom was the difficulty of breathing, which, indeed, was all that was complained of. The effect of the treatment demonstrated the impropriety of any further abstraction of blood. Calomel and James' powder were given every two hours; the throat was kept clear from phlegm by emetics, a variety being used in this case, as circumstances seemed to require, but without anything more than temporary relief; the usual symptoms of the membranous stage of the disease continuing with the eighth day, when the child died. Twenty-fours after death, I examined the body, and found the fauces slightly roughened. On the edge of the epiglottis, there was a small ulceration a quarter of an inch long, and two lines wide; the larynx and trachea were entirely free from mucus, and the lining membrane white and smooth until within about half an inch above the bifurcation of the bronchia, where a tubular membrane presented itself, lying lower within the cylinder of the bronchia; and it was so tough that it could be drawn out in pieces of an inch or more long. This membrane could be traced down to the extreme termination of the bronchial tubes

into the lungs. The anterior part of the lungs was healthy, and the posterior part more solid and livid than could be accounted for by infiltration after death.

Case III.—Whilst this case was progressing, an older child in the family presented symptoms similar to those which existed in the earlier stages of these cases just given. The throat in this boy was more painful than in the other children, and as he was more able to give an account of his sensations, the earliest attention was paid to him. Such treatment as the case seemed to demand was applied to him, such as gurgling the throat with a strong solution of nitras argenti, leeches to the throat, cathartics, emetics, &c. The disease seeming to be progressing, I put him upon the use of calomel and Dover's powder every two hours, so as to bring his system under the specific action of mercury, hoping thereby to arrest the disease. My friend, Dr. A. H. Stevens, whom, at this time, I had called in consultation, recommended a continuation of the remedies as the most likely to be attended with success. The calomel acted upon the bowels, producing bloody stools; and when the difficulty of the breathing was rapidly increasing, in a violent fit of coughing the boy threw up a large mouthful of phlegm, with entire relief to all his urgent symptoms. He convalesced gradually, and recovered so far as to attend school, when, five weeks after, he *contracted scarlet fever*, which he had very severely, in all its symptoms.

These cases are related as cumulative evidence of the existence of a disease terminating like the membranous stages of croup, but differing from that disease in its beginning as well as from the cynanche maligna, which it is well known often ends in a similar manner. When the "croupy cough" is considered, that prominent symptom, common to all, we can easily understand how diseases, whose pathological termination is alike, should be confounded, although their essential natures are very different.

If our impressions shall be confirmed by the observation of others, this subject is of importance in more ways than as a mere discrimination of shades of disease. Genuine croup, as has been demonstrated by Bayley, Cheyne, Hosack, and others, is an inflammatory disease, requiring antiphlogistic treatment in its first stage. The secondary croup, caused by cynanche maligna, would demand an opposite course; whilst in this, calomel would seem to be the remedy, offering the greatest hope. Bretonneau and other French writers contend that croup and cynanche maligna are identical, differing only in the seat which they occupy. "Il a prouvé ensuite, que ces deux maladies, identiques quant aux alterations pathologiques, ne different que par rapport au siège qu'elles occupent."* No mistake could be more fatal in practice. The invasion of genuine croup is sudden; the child is attacked (after exposure) when in high health; the constitutional symptoms do not appear until croupy cough has been some time present and even urgent. The secondary croup of scarlatina maligna, and in the cases of which we write, the croupy symptoms, do not appear until the patient has been some time indisposed. In genuine croup prompt antiphlogistic treatment in the first stage will relieve ninety-nine out of the hundred. Indeed, we have never met with a fatal case, when called to it in the first stage. In the secondary croup of cynanche maligna, nineteen died out of twenty. Of the cases we have

* Guersent, as quoted by Dr. Cheyne, Art. Croup, Cyclopedia Pract. Med.

given two died out of three. The difference in the diseases, we think, is sufficiently well established to require no fresh comment, as is also the treatment of genuine croup.

In examining the body of the second case, the condition of the trachea, free from mucus and pale, was very striking, whilst the bronchia were lined throughout with tubes like boiled macaroni.

Sydenham mentions that inflammation of the tonsils sometimes extends to the trachea, producing croup;* Bayley mentions that, in fatal cases of croup, he had found ulcers on the tonsils;† other writers have made similar observations. Dr. Cheyne, in a note to his very able article on croup in the Cycloped. of Practical Medicines, mentions three cases, which would seem to be of the same character as those which are here given.

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* Wallis' Sydenham, vol. i., p. 414.
† See Dr. R. Bayley's letter to Dr. W. Hunter.

PART SECOND.

Critical Analysis.

ART. VIII.—*Human Health; or the Influence of Atmosphere and Locality; Change of Air and Climate; Seasons; Food; Clothing; Bathing and Mineral Springs; Exercise; Sleep; Corporeal and Intellectual Pursuits, &c., &c., on Healthy Man; constituting Elements of Hygiène.* By ROBLEY DUNGLISON, M.D., Professor of the Institutes of Medicine in Jefferson Medical College, etc. A new edition, with many modifications and additions. Philadelphia: Lea & Blanchard. 1844. 8vo. pp. 464.

THE first thing that strikes us here is the change of title compared with the former edition of 1835; and this is a change that betokens the increased tact of the writer. Indeed, the same remark is justly applicable to the whole volume, which has undergone a complete revision. Since the publication of the former edition, as is justly observed by the author, the subject of Hygiology has received the fostering care of governments, which have investigated the subject very extensively in many of its relations. Many interesting sanitary inquiries and excellent reports, constituting the most valuable contributions to hygiology and vital statistics, have been thus made. The general views entertained as regards the salubrity or insalubrity of differing occupations, and more particularly as respects the factory system, have undergone a change through the results of these researches, which proves that the evil consequences attending these pursuits are due less to them *per se*, than to the hygiènic accompaniments of the *great town*, and much more to the *domestic* than to the *industrial* relations of the operative. It is thus conclusively proved that a low physical condition, as regards the social scale, is necessarily connected with a high mortality, and with a low moral condition; in other words, that vice, misery, early death, and a rapid increase of the population, are co-existent, and *vice versâ*. These are facts of the highest importance, equally to the physician, the philanthropist, the philosopher, and the Christian; for it has been clearly demonstrated that while health is improved and the mean duration of life is extended, through proper hygiènic measures, crime is, at the same time, diminished, and prisons are emptied.

An annoying circumstance, at least to a reviewer, connected with this volume, is the absence of a table of contents, which imposes upon him the necessity (not often done, it is said) of looking over the pages. The title, however, is so comprehensive, that it almost answers the same purpose.

As the former edition has made the general character of this volume pretty well known, it is deemed unnecessary to go much in detail, save

what regards the new light thrown upon the highly interesting subjects of hygiology and vital statistics, by recent investigations undertaken by governments. But as we have, in our late numbers, given, perhaps, a surfeit of hygiène to our readers, our remarks upon this volume will be restricted to the subject of vital statistics.

Vital statistics, unlike the remaining subjects of this volume, which admit of easy compilation, require to be *studied*. But the author does not appear, as we are reluctantly compelled to say, to have given that attention to this question which its high importance demands. The book certainly contains some very gross errors in this respect, several of which we will now lay before the reader. For example—

"The annual mortality of London, in 1700, was 1 in 25; in 1751, 1 in 21; and in 1801, and the four years preceding, 1 in 35; in 1811, 1 in 38; in 1821, 1 in 40:—*the value of life having doubled in London within the last eighty years.*"—P. 117.

The error of treating the proportions of deaths to the population as equivalent to the average ages of death, is one that has been made by nearly all statistical writers; and this fallacy is clearly pointed out by Mr. Chadwick in the Appendix to his Supplementary Report on the Sanitary Condition of the Laboring Population of Great Britain, being the "Results of a Special Inquiry into the Practice of Interments in Towns." It is stated, for instance, in his work on Annuities and Reversionary Payments, by Dr. Price, that the annual ratio of deaths in London, within the bills of mortality, was about 1 to 22 of the population; and this he regards as equivalent to the proposition that the average duration of life to all who died was twenty-two years. Mr. Süssmilch commits the same error relative to the dukedom of Wurtemburg; and the same charge rests against statisticians of the high eminence of Mr. Milne, Dr. Bisset Hawkins, and Dr. Southwood Smith, the last of whom says:—

"It has been shown that the average mortality at present at Ostend is 1 in 36, which is the same thing as to assert that a new-born child at Ostend has an expectation of 35½ years of life."

Although Dr. Dunglison does not inform his readers how the calculation of a duplication in eighty years is made, yet this is the mode. It is usually asserted by writers that, at the commencement of the last century, the proportionate ratio of deaths in London, so far as the estimates of the number of a people, in the absence of a census, may be relied on, was as much as 1 in 20. At the period of the first census (1801), the ratio, within the bills of mortality, had fallen to 1 in 35; and, at the present time, it is calculated to be 1 in 40. Hence it is obvious that a very great amelioration in mortality has occurred within a century; but it is said, in nearly all works treating on this subject, that the value of life in London, because the ratio of deaths has diminished one-half, has doubled within this period, which is certainly a very gross error.

This error of a duplication of the mean duration of life, in London, within a century, has not been exactly copied by the author before us; but he has actually magnified it, by taking the seventy years between 1751 and 1821, in which the ratio of deaths to the population has not been diminished quite one-half, and thus reducing the period to eighty years. Now, we will show satisfactorily that, *instead of a duplication of the mean*

duration of life in London within eighty years, the increase has not been more than four years and nine months within 100 *years.*

Mr. Chadwick, who is very happy in exposing the errors that have been created and maintained by this mode of calculation, namely, the regarding of *the proportion of deaths to the population as equivalent to the average ages of deaths*, says:—"That in no class of persons, in no district or country, and in no tract of time, has the fact hitherto appeared to be in coincidence with this hypothesis; and also that returns of the proportions of deaths to the population, when taken singly as the exponents of the average duration of life, are often mischievously misleading, exaggerating those chances of life sometimes to the extent of double the real amount. If Dr. Price, instead of resting satisfied with Süssmilch's hypothesis, had taken the actual ages of the dying within the bills of mortality, he would have found only a casual approximation to the hypothesis for the whole metropolis; and if he had taken the worst-conditioned districts, that, as applied to them, it was in error full one-half. On Mr. Milne's own data it appears that the proportions of deaths to the population at Carlisle, instead of coinciding with the ascertained average ages of death, 38·72, were, in the year 1780, 1 in 35; in 1787, they were 1 in 43; and in 1801, they were 1 in 44. Having caused an average to be deduced from the actual ages of 5,200,141 deaths which occurred in the Prussian States from 1820 to 1834, instead of 36 years, the actual average age of deaths was only 28 years and 10 months. The average ages of death in France, as deduced from Duvillard's table, founded on the experience of one million of deaths, instead of being 36 years, was 28 years and 5 months."

Again he remarks:—

"In illustration of the errors occasioned by taking the proportions of deaths as the exponent of the duration of life; if we take the proportion of deaths in the district of Islington, with its population of 55,720, we find the deaths for the year only 1 to every 55 of the population, which would appear to be a highly healthy standard; whereas, when we examine the average age of death of all that population who have died during that year, we find it to be only 29 years: in other words, we find that the average duration of the period of existence has even in that district been shortened by at least nine years to all, and to an extent of at least six years on the average to the class of adults. If we examine the pressure of the causes of death upon each class of the community, in the same district, we find that this class of artisans, instead of attaining 39 *years*, have, on the average, been cut off at 19 years; and hence that children and adults, and on the average all those of the laboring classes who have died, have been deprived of 20 years of the natural expectation of life; and that even the class of adults who have died have been deprived of 15 years of working ability, involving extensive orphanage and premature widowhood. If we take such a district as Bethnal Green, inhabited by weavers and a badly conditioned population, the returns of the proportionate number of deaths to the population (1 in 41) would lead to the supposition of an average vitality of nearly double the real amount, which appears from this year's return to be only 22 years for the whole population. For working classes in that district it is no more than 18 years."—Pp. 240, 241.

Let us now proceed to the demonstration of our proposition, that, in London, *instead of a duplication of human existence, on the average, within eighty years, the extension has not been more than four years and nine months, within* 100 *years.*

Mr. Chadwick having calculated, from the earliest to the latest returns published, the average ages of death within the bills of mortality in the metropolis, the following results were obtained:

Of all returned as having died during the	The average Age was Years,	Months.
22 years, from 1728 to 1749	25	1
25 years, from 1750 to 1774	25	6
25 years, from 1775 to 1799	26	0
25 years, from 1800 to 1825	29	0
6 years, from 1825 to 1830	29	10

Instead of a *duplication within eighty years*, as Dr. Dunglison tells his readers, it is thus demonstrated, from a calculation based on the average ages themselves, that the mean duration of life has increased only about *one-fifth in a century*, that is, *four years and nine months!* Even this slow general improvement has taken place only in particular classes. Of the whole of the working classes of the metropolis, the average age of death is, even now, not more than 22 years; and "in large sub-districts," says Mr. C., "if we could distinguish accurately the classes of deaths, the average would be found to be not more than half that period: a rate of mortality ascribable to increased over-crowding and stationary accommodation, greatly below anything that probably existed at the commencement of the century."

It is only in perfectly stationary populations and perfectly stationary causes of death, that the ages of the population from the proportion of deaths, could coincide with the duration of life in years; and the following remarks by Mr. Chadwick will show that the general physical condition of the population is the chief test of the pressure of the causes of mortality.

"The erroneous conclusions as to the ages of the populations from the proportions of deaths, have perhaps arisen from assumptions of the existence of states of things rarely, if ever, found, namely, perfectly stationary populations and perfectly stationary causes of death. I have been asked 'If 1 out of 40 die yearly, must not the average age of all who die be 40 years?" The answer, by actual experience, as we have seen, is, that it is often not 30 years; and perhaps the reason why it is not so will be most conveniently illustrated by hypothetical cases. For example, let it be assumed that in any given year 40 persons die out of 1600, which is in the proportion of 1 to 40, and in consequence of an unusual prevalence of measles, or some disease to which children are subject, the greater number of deaths occur amongst the infant portion of the population, and hence, out of the 40 deaths, 20 occur at 5 years of age, 10 at 25, and 10 at 60. Then the total existence had, would have been $(20\times5) + (10\times25) + (10\times60 = 100\times250 + 600 = 950$ years, and this divided by 40, the number who died, would give $950\text{-}40 = 24$ years nearly, as the average duration of life to each of the 40 who died.

"On the other hand, suppose a severe winter, in which the peculiar causes of mortality may have pressed unusually heavy upon the older lives, and let the numbers who died have been 20, at 60 years of age; 10 at 40; and 10 at 5; in such case, the total existence enjoyed would have been $(20\times60) + (10\times40) + (10\times5) = 1200+400+50 = 1650$ years, which, divided by 40, would give $1650\text{-}40 = 41\frac{1}{4}$ years as the average duration of life to each.

"And again, where, in fact, the proportion of deaths in one year may be represented as 1 death out of 20 of the population: the average existence enjoyed may be greater than when 1 in 40 died, for the reason given in the former case. As

for example, in the year when 1 in 20 died, it may have happened that the deaths were among the older lives, and that, taking one with another, the average age of all who died might be 50; while in the other case the mortality might have been amongst the infant population, when the average age might have been 20. If the proportion of 1 in 40 or 1 in 20, were to obtain each year continuously, taking one life with another, the average duration to a population just born, of whom 1 in 40 died, and whose place should be supplied each year by a new birth, would be about 20 years to each life, or one-half; and of a similar population, of whom 1 out of 20 died annually, the average duration of life to each would be about 10 years, or one-half the period at the expiration of which all the lives would have expired.

"When these examples are considered, it will be understood that the average age of death may remain stationary, or may go on increasing, whilst the proportions of death remain the same, or vary. The actual mortality of most districts is found to be coincident chiefly with its physical condition, and is most accurately measured by the years of vitality which have been enjoyed, *i. e.*, by the average age of death. The numbers of deaths increase or diminish considerably, and frequently create erroneous impressions, whilst the average ages of death are found to maintain a comparatively steady course, always nearest to the actual condition of the population, and give the most sure indications.

"The chief test of the pressure of the causes of mortality is, then, the duration of life in years: and whatever age may be taken as the standard of the natural age or the average age of the individual in any community, may be taken to correct the returns of the proportions of death in that same community. For example, in the returns of the St. George's Hanover Square district, it appears that in 1839, the proportion of deaths was 1 to 50 of the population; but the average number of years which 1325 individuals who died during that year had lived, was only 31 years, or 8 years below the average period of life in Carlisle. There was then in that district during that year a total loss of 10,600 years of life, which at 39 years may be considered as equal to an excess of deaths of 272 persons, and in a healthy state the proportions of deaths should have been 1 in 63 instead of 1 in 50 of the population. The excess in numbers of deaths in the metropolis has been measured by this standard, the total number of years of life would in a healthy community have been divided in portions of not less than 39 years to every individual who died.

"The effect of migration or of emigration, in disturbing the results of returns of the average ages of death in particular localities, appears to be commonly much exaggerated."—Pp. 242, 243.

Any further evidence in proof of the gross error thus committed by our author, is deemed wholly unnecessary.

The next point in vital statistics to be noticed is in reference to the fact, *that there is no exact ratio between the mortality and the longevity of a district.* Speaking of a table of longevity relative to certain counties in Virginia, Dr. D. observes:

"It is somewhat singular, too, that the proportion of slaves above 100, should be largest in one of the most unhealthy counties of the table."—P. 109.

Now we cannot see that any fact observed in nature should excite our surprise, when such fact, as for instance the daily rising of the sun, is known to every one. No man in the least acquainted with vital statistics, can be ignorant of the law, as stated by Mr. Rickman, of England, that "*the proportion of existing centenarians is no valid indication of national health or longevity.*"

This question is fully discussed in our second volume, p. 315, *et seq.*, to which we would refer the reader, curious on the subject, as we shall here present only some general facts. Evidence, is, indeed, presented,

on every hand, proving that centenarians, instead of being an indication of the vitality of the masses and of general longevity, are found in the greatest proportion in the most unhealthy populations. That these individuals possess a mere tenacity of life, which seems unsusceptible of explanation, is a supposition referred to in the Report on the Sanitary Condition of the Laboring Population of Great Britain :

"Some constitutions are found to resist vaccine matter. Here and there, constitutions appear which resist all the noxious influences by which they are surrounded, and attain extreme old age. Not unfrequently we find the existence of these solitary individuals referred to as proofs of the general salubrity of the very circumstance under which generations have fallen and been buried around them. It is a singular fact, as yet unexplained, that the greater proportion of centenarians are of the laboring classes; and that instances of them have from time to time appeared amidst the crowded populations in some of the worst neighborhoods of London, where the average duration of life is the lowest. It is remarked by M. Mallet, that in Geneva extreme old age has not participated in the prolongation of life which has taken place in the less advanced ages. In the periods of from 60 to 70 years of age, the amelioration is inconsiderable; after 70 years, there is no perceptible improvement; after 80 years, the aged have, indeed, a little less probability of life at the present time than they had in the 16th century. Centenarians, who were not rare in the 16th and 17th centuries, now disappear; during the last 27 years, Geneva has not produced a single one."

But to comprehend, in its fullest extent, this unexpected result, it is necessary to give a general view of the vital statistics of Geneva for the last three centuries. This is furnished in the *Annales d'Hygiène, Tome* xvii., in a most valuable paper of 168 pages, entitled, "*Récherches Historiques et Statistiques sur la Population de Genève, son Mouvement annuel et sa Longévité, depuis le* xvi^e^ *siècle jusqu'à nos jours* (1549–1833). *Par* Edouard Mallet, *Docteur en droit, membre, etc.*" It must suffice, however, to give general results only so far as will serve to illustrate the relations in which centenarians stand relative to the other laws of population and mortality. The *probable* and the *mean* durations of life in that city have increased in the following ratios :

PERIODS.	PROBABLE LIFE.				MEAN DURATION OF LIFE.			
	Years.	Months.	Days.	Propor.	Years.	Months.	Days.	Propor.
1560—1600	8	7	26	100	21	2	20	100
1600—1700	13	3	16	153	25	8	2	120
1700—1750	27	9	13	321	32	7	22	153
1750—1800	31	3	5	361	34	6	11	162
1800—1813	40	8	0	470	38	6	0	181
1814—1833	45	0	29	521	40	8	7	191

It is thus seen that the probability of life to every individual born, was, in less than three centuries, doubled more than five times; and yet, directly in the face of this extraordinary fact, we have the equally extraordinary result, that with the *prolongation of the mean term of life, the number of centenarians has gradually diminished*, as has been shown in the extract just made. But we will give the result in Dr. Mallet's own words :

"Cependant la vieillesse n'a point participé à la prolongation de vie qui a eu

lieu dans les âges moins avancés. De 60 à 70 ans l'amelioration est très faible: à 70 ans elle est nulle. Depuis 80 ans, le vieillard a un peu moins de probabilité de vie dans l'époque actuelle qu'il n'en avait au xvi^e^ siècle. *Les centenaires, qui n'étaient pas rares aux* xvi^e^ *et* xvii^e^ *siècles, disparaissent maintenant: depuis 27 ans Genève n'en a pas produit un seul. Loin de marcher vers une carrière patriarchale, la vieillesse a reculé et perdu du terrain.*"

Thus far, adds Dr. Mallet, we have seen no population rich in centenarians, save those in which the mean duration of life is short.

This is, indeed, a universal fact. Look, for instance, in the *Annal. d'Hyg.*, Tome xv., which contains a contribution by Sir Francis D'Ivernois, who arrives at the conclusion, that an *unusual number of centenarians, so far from being an indication of the vitality of the masses, is rather a proof to the contrary.* Again, Dr. Odier, in the *Bibliothèque Britannique de Genève*, as long ago as 1797, drew the inference, that *a high ratio of centenarians does not imply an equally great probability of life; but the contrary.* The opinion of Mr. Rickman relative to England has been already stated; and lastly let us refer to the Fifth Registration of England, where a comparison is made, by way of contrast, between short-lived Liverpool and the salubrious district of Surrey; and it will be seen, that while the former has eight centenarians, the latter has but a single one. It may be added that London, a century ago, had three times as many as now, when the condition of her population, *though the value of life has not doubled in eighty years*, has become vastly improved. Yet the writer before us who professes to teach vital statistics, tells us, that the fact, that one of the most unhealthy counties of Virginia has the largest proportion of colored centenarians, is "*somewhat singular!*"

There still remains another point of vital statistics, upon which we feel the unpleasant necessity of making some further strictures. It has been inferred by an English writer, Dr. Madden, from a comparison of the ages of learned men, that longevity was favored by the study of the arts and sciences, while, in literary pursuits, in which the imagination is vigorously exerted, he thinks that there is a much greater wear and tear of the system. To ascertain the influence of different studies on the longevity of authors and artists, Dr. M. selected from each of the various departments of literature, art, and science, twenty of the most eminent names, without any regard to the ages of those who presented themselves to notice; and, accordingly, the following average duration of life and order of longevity were adduced:

	Average Years.	*Average Age.*
Natural Philosophers,	1494	75
Moral Philosophers,	1417	70
Sculptors and Painters,	1412	70
Authors on Law and Jurisprudence,	1394	69
Medical Authors,	1368	68
Authors on Revealed Religion,	1350	67
Philologists,	1323	66
Musical Composers,	1284	64
Novelists and Miscellaneous Authors,	1257	62½
Dramatists,	1244	62
Authors on Natural Religion,	1245	62
Poets,	1144	57

Now, our object in introducing this table here is to show that no writer acquainted with the principles of vital statistics, would place such data upon his pages as worthy of reliance. Dr. Dunglison, it is true, makes

the remark, "that in the formation of all such tables, much room is allowed for the intrusion of error. Different individuals may have different views, as regards those who are the most eminent, and the greatest discrepancy may be exhibited in the results, although the investigators may have been equally disposed to discard intentional error." Now, this is an objection that would occur to the mind of any ordinary observer, but it is not such a one as he, versed in vital statistics, would make.

The scale of longevity here given by Dr. M., it is evident enough, is based mainly upon the difficulty experienced in acquiring such a reputation in science or literature as would carry the individual down the stream of posterity. Hence it would be extremely absurd to regard these average ages at death, as the longevity of this class compared with that of any other; and even as respects the different literary and scientific pursuits composing the class given above, a comparison is but partially allowable. Dr. Madden, as the result of his researches, is especially desirous of inculcating the opinion, "that the vigor of a great intellect is favorable to longevity in every literary pursuit, wherein *imagination is seldom called on.*" Now, in calculating the probability of life in any class of individuals devoted to a particular pursuit, whether corporeal or mental, it is necessary to start from that period in life which is the average age of entering upon such occupation. Hence, as the imagination of the poet is more early developed than the mature judgment required on the part of the natural or moral philosopher, to secure him the reputation necessary for being selected as one of the above table, it follows that the average age at death is here no fair test of comparative longevity. The powers of imagination may be abundantly developed at as early an age as fifteen years,* while it is seldom that a man obtains a distinguished reputation as a moral or natural philosopher under the age of forty. Some idea of the difference thus produced may be formed from the annual decrement of life, which among 100,000 born in England, is, at the age of fifteen, 68,627, and at forty, 53,825; or if we assume that a poet at twenty-five will have as much reputation as a moral or natural philosopher at forty, the following will be the results:

	Age. Expectation of Life.
Natural Philosopher, . .	40 + 27·14 = 67·14
Poet, ...	25 + 36·99 = 61·99
	5.15

Here the difference in the expectation of life is upwards of five years, and if the calculation for the poet were made at twenty, it would be almost seven years.

In the last Registration of England, the inapplicability of the average age at death, in the investigation of the agency of occupation, rank, and profession upon health and mortality, is clearly demonstrated.

"The numbers," says the Registrar-General, "following different professions, fluctuate more than the general population; the relative proportion of young and aged persons varies from year to year; certain professions, stations, and ranks are only attained by persons advanced in years; and some occupations are only

* Our distinguished townsman, Mr. Bryant, wrote pieces, which were published, before the age of ten. At thirteen, a small volume of his poetry was published; and at seventeen, he wrote that admirable piece, entitled "Thanatopsis." Pope's Ode on Solitude was written at the age of twelve, and his Ode to Silence, soon after.

followed in youth; hence it requires no great amount of sagacity to perceive that "the mean age at death," or the age at which the greatest number of deaths occurs, cannot be depended upon in investigating the influence of occupation, rank, and profession upon health and longevity. If it were found, upon an inquiry into the health of the officers of the army on full pay, that "the mean age at death" of "Cornets, Ensigns, and Second Lieutenants" was 22 years; of "Lieutenants" 29 years; of "Captains" 37 years; of "Majors" 44 years; of "Lieutenant-Colonels" 48 years; of general Officers, ages still further advanced—and that the ages of Curates, Rectors, and Bishops; of Barristers of 7 years' standing, leading Counsel and venerable Judges—differed to an equal or greater extent, a strong case may no doubt be made out on behalf of those young, but early-dying Cornets, Curates, and juvenile Barristers, whose "mean age at death" was under 30! It would be almost necessary to make them Generals, Bishops, and Judges—for the sake of their health. The Assurance Societies are happily so considerate and liberal that they do not attach the slightest importance to the mean age at death, but assure the lives of young men of all the professions at the age of 24 upon the assumption that they will live 38 or at the least 31 years, and pay 38 or 31 annual premiums on an average before they die; while they make the Bishops, Judges, and Generals, who go to insure their lives at 60, pay as if they would live but 13 or 14 years."

This is, indeed, a happy illustration, for, according to a return of the ages of 4866 British officers, the cornets, ensigns, and second lieutenants, had an average age at death of 21 3-10ths years, and the lieutenant colonels, 47 years, while the first lieutenants, captains, and majors, had an intermediate average age at death respectively of 28 12-19ths, 36, and 43 1-8th years. We are thus taught the fallacy of comparing the average age at death of the poet with the natural or moral philosopher. But as a still more absurd application, in this respect, of the mean age at death, the Registrar-General states, that it has been somewhere used as a proof of the destructive effects of the employment of dress-makers. "If the inquiries," he says, "had been extended to boarding schools, or to the boys at Christ's Hospital, the average age at death would have been found still lower." Now, as it appears that the majority of dress-makers are between the ages of 16 and 26, and as it is said that, if they die after marriage, they are not designated thus in the Register, the phenomenon admits of ready explanation.

Let us illustrate the error of Dr. Madden's comparative ages, a little farther, by reference to Dr. Lombard's statistics of Geneva,* which comprise the period from 1796 to 1830, and embrace 8488 deaths; and of these deaths, as the object is to determine the influence of professions upon the duration of life, all are males of sixteen and upward.

Dr. Lombard presents, in the order of longevity, a list of forty-two arts, trades, and professions; and at the head of this category stand, first, Magistrates with an average age of 69·1 years; secondly, persons with a fixed income, having a mean of 65·8 years; thirdly, Protestant Clergymen with a mean age of 63·8; and thus it descends to painters and varnishers, who have an average age of but 44·3 years. Although this shows, what is a fact, that the duration of life varies greatly among different classes of the population; yet it is easy to see, as in Dr. Madden's table, that the average age at death is liable to very great error in investigating the influence of rank, profession, and occupation upon health and longevity,

* De l'Influence des Professions sur la Durée de la Vie. Recherches Statistiques. Par le Dr. H. C. Lombard, Médicin de l'Hôpital Civil et Militaire de Genève.

inasmuch as some of these are attained only by persons advanced in years, while other occupations are followed only in youth. As colonels and generals, as we have seen, have necessarily a much more advanced age at death, than brevet-second lieutenants, and so of venerable judges and bishops compared with barristers and pastors, it requires no great sagacity to see why magistrates stand at the head of the list of longevity in Geneva; and the same remark applies to the comparison of poets and natural or moral philosophers.

If the republic of Geneva was like that of our own country, there would have existed a general movement of the population from the lower into the higher ranks of society. Thus we find in our own city of New York, that the shop-boy grows into the merchant, the alderman, and finally the mayor; and as these promotions are slow as a general rule, it is not difficult to perceive, as the higher positions are attained by those only who have a long life, why the magistrates of Geneva, as just remarked, occupy the highest point on the scale of longevity. If health depended on being a magistrate, then were it an admirable hygiènic improvement to make magistrates of the whole community; and hence, too, in a thriving country like ours, if the mean age of the wealthy and the indigent were made the criterion of the relative health and longevity of the lower and upper classes, the difference would obviously be exaggerated.

If the professions, during the period under observation, are stationary, or if they all increase at the same rate, and the numbers at each age of life continue in the same proportion, the results will be conformable to truth. The danger of error lies in the circumstance, that if any profession, from favorable causes, increases in number, the augmentation is due to a disproportion of *young* men; and hence the mean of the ages of death, which would be diminished, would be due, not to the unhealthiness of the profession, but to the disproportionate number of young men.

Our object here, is not to criticise Dr. Lombard, who does not forget to caution his readers against comparing the mean age at death, of the magistrates with the various occupations, but to show the fallacy of Dr. Madden's mode of determining this question, which has been adopted by Dr. Dunglison, and, in fact, by nearly all other writers.

It may be here stated that the mortality of no population, or of any class or profession, can be accurately determined without having the ages of the *living* and the *dying* at a given time, that is, an enumeration of the *ages of the living* out of which the deaths occurred at the several periods of life; and this is a relation which has never been ascertained for any country, except Sweden and England.

Leaving the reader to form his own opinion as to the profundity of knowledge possessed by our author upon the subject of vital statistics, we will now proceed to show, upon correct statistical principles, the duration of life enjoyed by individuals devoted to science and literature.

The data upon which our results are based, and which are not referred to by Dr. Dunglison, consist of 719 members of the three French academies, entitled "Académie Française," "des Inscriptions," and "des Sciences," and extend over the period from 1635 to 1840. These calculations have been made by M. Benoiston de Châteauneuf, in his researches relative to the duration of life among "*Savans et les Gens de Lettres.*"*

* De la Durée de la Vie chez les Savans et les Gens de Lettres. Par M. Benoiston de Châteauneuf. *Ann. d'Hyg.*, Tome XXV.

If it is true, he says, that riches add to the number of our days, how much more must science, which is the truest riches, have the happy privilege of prolonging our existence. And the additional remark may not be out of place, that these three academies afford confirmation of the old opinion, that a man of letters has very rarely a son that succeeds to the talents of the father. On the contrary, as regards the sciences, it is not rare to find, among these academicians, as, for instance, in astronomy, botany, and other departments of natural history, illustrious examples, during the two centuries, in which the talents and virtues of the father were transmitted from age to age.

Of the 1100 academicians, only 719 have been included in the tables of M. de Châteauneuf, as the requisite data for the calculations could be ascertained in these alone. Besides, all members who did not come under the names of philosophers or men of letters were excluded, and also all foreigners of every class, with the exception of such names as MM. de Humboldt, de Saussure, de Candolle, etc. The mean age of all these academicians, at the period of their election, was forty-four years and two months; and this is to be considered as the period of their birth—their birth as academicians—after the same manner as general tables of mortality commence with 0.

But, in regard to this age, some difference is observed in the different academies. It is for—

L'Académie Française, ...	46	years and	2	months.
L'Académie des Inscriptions, . . .	46	"	0	"
L'Académie des Sciences, . . .	41	"	3	"

It thus appears that men of science acquire, at an earlier date than men of letters, that degree of reputation which secures an election as an academician; for, while science is characterized by something positively true and really useful, the productions of the mind, that is, works of taste, rarely obtain unanimous praise. Thus the discoverer of the laws of gravitation found a place, at the age of twenty-four, in the Royal Society of London, and the author of a new system of geology was chosen, at the same age, to a seat in the Royal Academy of Sciences at Paris; while the immortal author of *Jerusalem Délivrée* received, after having passed his fiftieth year, the honors of a tardy triumph, and after he had seen the most learned body of Italy dispute with him his glory, and designate in his poem more of faults than of beauties.

The 758 members of the three academies who exist no more, lived 52,188 years, which give to each one of them a mean duration of life of 68 years and 10 months; but, as in the case of admission, which had a mean of 44 years and 10 months, this ratio varies in each of the three learned bodies. It is for—

L'Académie Française, ...	69	years and	3	months.
L'Académie des Inscriptions, . . .	69	"	7	"
L'Académie des Sciences, . . .	67	"	11	"

And the mean duration for an academician is at—

L'Académie Française, ...	23	"	1	"
L'Académie des Inscriptions, . . .	22	"	8	"
L'Académie des Sciences, . . .	26	"	7	"
Mean, ...	24	"	7	"

It may be here remarked, that of 758 academicians, who together formed the mean age of 68 years and 10 months, 394, or, more than the half, passed that epoch, and that of this number, a third (145) passed still much further into the vale of years. Thus—,

124	lived from	80 to 90	years, and
21	"	90 to 100	"
145			

Repeating the results of the mean age of admission, which is 44 years and 2 months, and of the mean duration of the life of each member, as an academician, which is 24 years and 7 months, we are now prepared to institute a comparison with the law of mortality established by Deparcieux from the lists of the French tontines from 1689 to 1696, which show that then, which was the period when some of these academicians were born, the expectation of life at the age of forty-four or forty-five, was equally about twenty-five years; but, at the same time, it must be borne in mind, that the nominees of the tontines were selected individuals, who, as is well known, have a much lower mortality than the population at large. M. de Châteauneuf further compares the expectation of life among the academicians with some recent French tables by M. de Montferrand, which show an expectation, at this age, of not more than 24 years and 2 months. Thus additional confirmation is afforded of superior longevity among the *savans*. In the life-table given in the Fifth Annual Report of the Registrar-General of England, based upon the census of 1841 and the registration of all the deaths, the ages of the living out of which the deaths occurred being enumerated, and which has consequently all the requisites of correctness, the expectation of life, at the age of forty-five, is 23·9 years; in Sweden and Finland, it is 22·1. In the large towns of London and Liverpool, as determined also in 1841, the expectation of life at the age of 45, is in the former but 20 years, and in the latter but 18, while in the more salubrious rural district of Surrey, adjoining the metropolis, it is as high as 24 years.

Deparcieux also made some calculations relative to the members of the Academy of Sciences; and, assuming that the mean age of their admission to membership was thirty-five years, he gave them an existence of sixty-five. M. de Châteauneuf, likewise, took the ages of a thousand *savans* at hazard, from the *Biographie Universelle*, all born in Europe, and in the eighteenth century; and their mean age at death he found to be 65 years and 10 months. This is certainly a marked concordance.

It is thus seen that upon the philosopher and the man of letters is bestowed a mature longevity, which is, doubtless, the result of habits of serious study and of profound meditation upon grave and elevated subjects; and this gives to his actions a calmness and moderation, which establish that harmony between the *morale* and the *physique*, that is regarded by M. de Châteauneuf as, perhaps, the only condition of a long existence. It may, indeed, be now regarded as an established axiom, that literary pursuits, whether they require the exercise of the judgment or the imagination, are directly favorable to longevity. That genius is often accompanied with a corporeal system unusually susceptible to impressions, both internal and external, is, no doubt, true; but even here, as the evils that arise are dependent on collateral circumstances,—a neglect or infringement of the hygiènic laws appointed by Divine Wisdom—they

are not chargeable to the mental occupation. In addition to the causes before mentioned, connected with vital statistics,—why the life of the poet should be the most contracted among those devoted to art, science, and literature, is, the circumstance of the early appearance of their productions, the celebrity of which leads them into a certain kind of society, where habits destructive to health are contracted. Besides, the excitability of their temperament is apt to lead them to indulge in ardent spirits; for example, Burns, Dryden, Pope, Collins, Byron, and—but we will not drag any further the frailties of genius from their "dread abode."

But it is not the precious advantage of a long life alone that the culture of the science and of letters reserves for those who devote their existence to it; they find in it the sweet influence arising from honor and glory, which shed a halo even around the tomb.

It is only the portion of this volume devoted to vital statistics that we have thought worthy of very special notice, the remaining parts being of such a nature that they might be readily compiled by a very ordinary writer. We have hence taken the portion which might afford a test of the ability of the author, on the ground that vital statistics do not admit of compilation, but require to be closely investigated. We have shown that our author has compiled the magnificent blunder of a duplication of the mean duration of life in London in eighty years, while the actual extension of human existence, during a century, has not been more than four years and nine months. We have shown that a large proportion of centenarians in an unhealthy population, which he regards as a wonderful phenomenon, is a fact well known to every writer on population, and was known even in the last century. We have shown that his mode of investigating the law of longevity relative to the influence of arts, science, and literature, is totally unworthy of any writer making pretensions to a knowledge of vital statistics; and, in connection with this point, we have given data from three French academies which will instruct him how, in future, to investigate the subject.*

ART. IX.—*Traité des Maladies de Plomb ou Saturnines.* Par L. Tanquerel Des Planches, Docteur de la Faculté de Médecine de Paris. Paris: 1839. Tomes ii. 8vo. Pp. 550, 552.

A Treatise on Diseases produced by Lead. By L. Tanquerel Des Planches, Doctor of the Faculty of Medicine of Paris. Paris; 1839.

THE rapid progress which our country is making in the arts, renders it desirable that the effects of the materials employed in them, upon the health, either of those who labor in them, or of those who make use of the manufactured article, should be known. It is well that we should be informed what processes prove injurious, and what remedies or preserva-

* We had prepared an article for this Number, entitled "*Vital Statistics—its Nature and History,*" which was already in the hands of the compositor, when we received information of our successful competition for the Boylston prize. We purpose giving it in the next Number.

tives have been discovered, or what precautions are to be used. There is no danger but that American skill and enterprise will avail themselves of whatever inventions or improvements, originating abroad, promise to facilitate the attainment of wealth. The spirit of gain may be relied upon for this, and the philanthropist has no need to interfere. But humanity dictates that the results of inquiry and experience, with the knowledge of which is connected the physical well-being of multitudes among us, should be spread before the public.

Lead is used in the arts in a great variety of ways; in more ways, probably, by far, than persons, who have given no particular attention to the subject, are aware. The sufferings to which they who work in it, or in the arts in which it is used, are exposed, and the dangers in other modes incurred from it, are known, it may be presumed, to but few among us, even of the profession. We every now and then hear of accidents, and sometimes death, occasioned by it, as when substances containing an acid, or in which an acid is produced by fermentation, are kept in glazed vessels, and sometimes when water used for drinking is conveyed in lead pipes. But these cases are generally dismissed without much thought. Few give themselves the trouble to inquire into the real effects of lead on the human constitution, or the various forms in which it may prove pernicious.

The work, the title of which we have placed at the head of this article, makes many startling developments; and we believe that its statements are entitled to entire confidence. It is no crude, hasty work, gotten up in the style of bookmaking but too common in these days. It contains the results of long and careful observation and experiment, by one who possessed opportunities which in this country do not exist. The author states what he has himself witnessed; he has collected and arranged a multitude of facts, and drawn his conclusions from them. He gives an account of diseases, their history, symptoms, the mode in which they were contracted, and the treatment employed, whether successful or unsuccessful. The work is one, the interest and utility of which are not confined to the medical profession. It is one from which all who have anything to do with lead, if it be only to live in painted apartments, may learn something. Even as a matter of enlightened curiosity, the information it conveys is worth having; but this is trifling compared with its subservience to the cause of humanity.

The author, L. Tanquerel Des Planches, begins by observing that, from a very remote antiquity, the colic produced by lead is the only form of saturnine malady which has particularly engaged the attention of observers; that other forms of it have either escaped their notice, or have been treated casually and very superficially, chiefly in connection with the colic. This defect he endeavors to supply, at the same time furnishing a mass of new facts on the subject of the colic, the form of the disease best known. He commenced his researches in 1831, and, in 1834, published an essay on Lead Paralysis. Since that time, he has pursued his inquiries with great care and minuteness; and his connection with the "Hospital of Charity," the chief receptacle for laborers suffering from lead in Paris and its vicinity, furnished him with the means of conducting his observations on a large scale. Very few who applied for advice at the hospital during the eight years preceding the publication of the present work escaped his attention He also frequently visited the apartments in

which the workmen labored, and made minute inquiries there; he tried various methods of preserving the laborers from the deleterious effects of lead, and made chemical experiments in order to detect lead in the human system. The present work contains the result of these eight years' inquiry and observation.

We can give but an imperfect analysis of the work (extending to eleven hundred octavo pages) within the limits of a single article. But we will do what we can, selecting chiefly such parts as may be most interesting and important.

Disease occasioned by preparations of lead, Des Planches says, exists in four well-marked forms, which are independent of each other, though they may exist simultaneously, or follow one the other. These forms have not hitherto been well defined, and to avoid periphrasis, the author has been under the necessity of inventing terms for a part of them. They are the Colic, "Arthralgie" (from two Greek words, signifying pain in the limbs), Paralysis, and "Encephalopathie," (affection of the brain), the epithet Saturnine or lead, being added to each, to distinguish it from similar forms of disease originating in other causes. Of these, the first is by far the most frequent. Their relative frequency is as follows. Of the cases which fell under the author's notice, 1,217 were cases of colic, 0,755 of arthralgy, 0,127 of paralysis, and 0,072 of encephalopathy. One form seldom exists alone, but is accompanied, preceded, or followed by one or more of the others. One form predisposes to another, though the violence of one form is no indication that the other forms will be violent also; they may be moderate or light. The malady may develope itself in the same or in different forms in the same individual at different times, without any change in the circumstances of exposure. The circumstances of exposure do not determine the form in which the disease makes its appearance.

These and some other general conclusions to which the author has arrived, he states in his introduction. He then proceeds to treat of the action of preparations of lead upon the system before the development of saturnine maladies.

Lead may be taken into the system by breathing an atmosphere surcharged with particles of it, or by swallowing it mixed with food or drink; that is, by the respiratory or digestive organs. When thus introduced, in any large quantity, certain effects usually appear before disease developes itself; and by these, the primitive action of the poison called by the author primitive intoxication, may, in ordinary cases, be detected. These effects often manifest themselves very soon in those who labor habitually in an atmosphere loaded with the dust or fumes of lead, as in the manufacture of white lead, minium, litharge, or in wines, but not so soon, and rarely in such number, in those who are only occasionally exposed to such an atmosphere, as painters of buildings, and those who labor in type-foundries, and in the manufacture of earthen pottery; while in those who handle the metal only in its fixed state, and are not in contact with an atmosphere in which particles of it are disseminated, none of these primitive effects of the poison are discovered.

These effects, which are indications of the presence of lead in the system, but which precede the development of disease, are, a certain discoloration (which we cannot stop to describe) of the teeth, gums, and generally the mucous membrane of the mouth; a peculiar taste, generally

sugary, styptic, and astringent, in the mouth; a certain indescribable fetor of the breath; and what is often very striking, a foul, earthy yellow of the skin, sometimes called the leaden-yellow tint, appearing chiefly in the face, and frequently confounded with the jaundiced yellow, from which, however, it may be readily distinguished by those who have had opportunity of observing the two. This is the effect of an alteration in the blood produced by the poison. Another effect sometimes witnessed is great emaciation. This is frequently general, but often more marked in the face, which becomes shrivelled, has a look of peculiar sadness, and exhibits all the appearance of premature age. There is usually no irregularity of pulse; rarely any quickening, or hardness; but, in almost all cases, the reverse; the beats, in persons affected, being from forty to fifty-five in a minute, when they were before sixty or seventy.

These primitive effects of poisoning by lead may exist independently of the maladies occasioned by it; they may precede the development of the malady from a few hours to entire years; and, sometimes, individuals may exhibit traces of them through life, and yet never be attacked by the saturnine maladies; but these maladies very rarely appear without being preceded by one or more of the above-mentioned symptoms.

We now come to the maladies themselves. Of these, the first is lead colic. This we need not stop to define. It is known under the name of painters' colic, and a variety of other names, which the author gives. He then traces its history as far as it can be collected from medical treatises, from the earliest times down to the present day. Distinct notices of the disease do not occur in writers of greater antiquity than Hippocrates. Yet the disease must have existed before his time. The art of mining, of casting, of working in metals, and especially lead, was cultivated with greater or less assiduity, as history informs us, among all ancient people. Where the fine arts and industry have flourished, painting must have been known, and colors employed, and those furnished by lead could hardly have been overlooked or neglected. Theophrastus, indeed, in showing the manner in which white lead used in painting was procured, describes the same processes very nearly with those now used. The disease, therefore, must have occurred, though no distinct traces of it are left in history.

Nicander, the most ancient medical writer after Hippocrates, whose writings have come down to us, gives a very exact description of it, recognizing also paralysis, occasioned by preparations of lead introduced into the stomach. Notices of the deleterious effects of lead are then traced down through Dioscorides, Galen, Aretæus, Paul of Ægina, and others among the Greeks and Latins, and Rhases, Hally-Abbas, and Avicenna among the Arabs. The last mentioned is more full on the subject than his predecessors.

During the middle ages, from the twelfth to the sixteenth centuries inclusive, several writers are mentioned as alluding to the subject, though no special treatise upon it has come down to us from those times. The seventeenth century produced many dissertations on lead colic. Among the authors referred to, are Citois on the colic of Poitou, Charles Lessois, and Stockhusen, who, living in a country of mines, made very important discoveries on the subject of emanations of lead. "From this time," says Des Planches, "the lead colic became much more frequent than before." And why? Because its symptoms were better known and the cause had been discovered, and the attention of physicians was directed to the

disease. About the middle of this century, Wepfer addressed a letter to the government of Wurtemberg, in which he speaks of the colic and paralysis produced by wines adulterated with litharge, to render them more palatable. He is the first author who recognizes the cause of the colics produced by drinks adulterated by preparations of lead. Before his time they appeared as epidemics, but the cause to which they were to be attributed was unknown.

It is worthy of remark here, that, although the ancients were ignorant of the art of adulterating wines with litharge and other preparations of lead, yet it appears from Cato, Pliny, Columella, and others, that the Greeks, the Romans, and other ancient people, were in the habit of boiling the juice of the grape in leaden vessels in order to obtain a syrup, which they mingled with their wines to preserve them, to render them agreeable, and prevent acid fermentation. This practice was general, and the philosophers recommended it, of course believing it innocent. Thus, however, the acetate of lead must have been produced, and the result, from time to time, must have proved injurious. Occasionally, as Columella informs us, a piece of lead was introduced into the cask to prevent or retard acid fermentation. This must have been attended with a similar result. Disease, no doubt, occurred, but its origin baffled the skill of physicians; and, like the cause of many other maladies, was considered as involved in mystery.

The eighteenth century witnessed many publications on lead colic under different names; one of Dehaen, in 1745, on Colica Pictonum; of Huxham, about the same time, on the colic of Devonshire, England, proved by Baker and others to have been occasioned by the use of lead used about the cider-presses in that country; and several others, an account of which is given in the work before us.

Preparations of lead generally are more or less soluble in various liquids, mineral, vegetable, and animal. They are capable, too, of being reduced to the form of powder, or they may be volatilized; and taken into the system in either form, they are productive of disease. This is true of both the oxides and salts of lead.

It is a question of some importance, and one which has given rise to some discussion, whether lead applied directly to the skin can be absorbed in such quantities as to produce disease. Des Planches is confident, from various experiments, that it cannot, unless the epidermis be first removed, but it must be absorbed through the respiratory or digestive organs. It would seem not the less true, however, that the external surface may become the avenue of its introduction into the system. This has been inferred from the fact, that those workmen among the preparations of lead, who are careful to change their clothes and to practise frequent ablutions, are much less liable than others to the deleterious effects of their occupation. It is, doubtless, from the greater exposure of certain parts of the body that one of the distinguishing characters of the disease takes its origin, viz., the tremulousness of the hands, and the weakness of the carpal joint, called by the workmen, the *wrist-drop*. This disease has prevailed to some extent in the army of the United States. In 1831, as it was attended with obstinate constipation of the bowels and paralysis of the hand and fore-arm, the local effects might perhaps be ascribed to the circumstance, that, as it was necessary to moisten the white lead and apply it by means of a sponge, to their belts and gloves, the hands of the soldier were daily exposed to its action; and, as the belts were also

rubbed with pumice-stone, the constitutional effects may be more directly attributed to the particles of lead inhaled. That this metal produces a specific derangement of the animal economy, of which the symptoms of colic are only a manifestation, is clearly evident; but that this agent may also produce a local disease, manifesting itself more strongly in the part to which it is immediately applied, would seem to be, in some degree, warranted.

Under the head of occupations which give rise to lead colic, we find, in the work of Des Planches, abundance of interesting matter. He gives a table indicating the occupations of 1213 individuals affected with the colic, all of whom fell under his observation, and all, except nine, in the Hospital of Charity, between the years 1831 and 1839.

Manufacturers of White Lead,	406
" " Minium (red lead),	63
" " Mine orange,	12
Painters of buildings,	305
Carriage painters,	47
Ornamental Painters,	33
Painters on Porcelain,	3
Gilders on Wood,	1
Painters and Varnishers of Metals,	2
Paper Stainers,	2
Grinders of Colors,	68
Manufacturers of German Cards,	13
" " Glazed Cards,	6
Belt Makers,	2
Perfumers,	2
Manufacturers of common Earthen Pottery,	54
" " a finer species of Pottery (Faïence),	7
Refiners,	25
Plumbers,	14
Platers (in tin and lead),	8
Manufacturers of the powder of tin (used in polishing),	4
Workers in Tin,	4
Jewellers, Goldsmiths, and manufacturers of Toys,	4
Casters in Copper,	2
" " Bronze,	1
Type Founders,	52
Printers,	12
Manufacturers of Shot,	11
Lapidaries,	35
Cutters and Polishers of Crystals,	3
Laborers in Glass manufactories,	2
" " manufactories of the Acetate of Lead,	4
" " Nitrate of Lead,	3
" " Chromate of Lead,	3
Total,	1213

As a very large portion of those attacked with lead colic in Paris and the vicinity resort to the Hospital of Charity, on account of the celebrity of its ancient treatment, the table above given may be considered as indicating, with sufficient precision, the relative frequency of the malady among those engaged in the various arts in which lead is used. In all the occupations or arts enumerated in the table, lead is employed, and

those who labor in them are, in one form or another, exposed to its action.*

Of these occupations, the most pernicious, as it appears, is the manufacture of white lead. Next comes that of the common house painter. Of those who labor in this occupation thirty or forty years, about one-fourth part are, once at least, attacked. This is to be attributed to the large quantity of white lead which is used, as a coat of this is first given which serves as a base for whatever colors are to be laid on The chromate of lead, and a little minium, and litharge, too, are occasionally used. The process of mixing the colors is particularly dangerous, and the oil of turpentine used for drying, by taking up particles of lead and diffusing them in the atmosphere, increases the hazard, as also the hazard of remaining long in fresh painted apartments. The most dangerous process of the whole, however, is the brushing over of old paint for the purpose of cleaning it in order to repaint, as thus a great quantity of dust of lead is raised, which fills the mouth and nostrils of the workmen. To prevent this, water or a moist brush should be used.

The prepared varnish, which is sometimes used, is rather a preservative, as it prevents the particles of lead from escaping into the atmosphere. Painters, who grind their own colors, are doubly exposed. Persons are sometimes attacked from sleeping in apartments recently painted, or from living with painters in rooms where they grind their colors and mix their paints.

Painters of carriages are less likely to suffer than house painters, because they use a less quantity of deleterious materials, and employ more varnish. Portrait and landscape painters, and others similarly employed, were occasionally attacked in former times, when they prepared and ground their own colors, and had the habit of cleaning their brushes in their mouths, as was the case with one individual, at least, who is recorded as suffering from lead colic and paralysis.

Gilders on wood occasionally make use of preparations of lead; varnishers of metals use them in large quantities; both are sometimes attacked, though rarely. Paper colorers are subject to attack chiefly from the process of preparing the materials by boiling, and not from the act of laying on the liquid, or paste, in which, with due caution, there is little danger.

The grinding of colors, by the hand, as white lead and yellow of chrome, as still practised in some establishments, is exceedingly fatiguing and pernicious. Formerly this was one of the occupations which sent the largest number to the Hospital of Charity. There are mechanical means now in use, however, which render it far less dangerous.

In the manufacture of German cards, white lead, minium, and litharge, are all used. The boiling of the materials is the part of the process particularly deleterious. This disseminates particles of lead in the establishment, which soon becomes covered with them, and must be cleaned every three or four days, a process which again loads the atmosphere of the apartment with poisonous materials. There is a process of making glazed cards, however, somewhat different, in which the grinding of the colors is the only part which is dangerous.

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* The author enumerates other occupations which give rise to the disease, as he has satisfactorily ascertained from testimony, but no cases fell under his observation.

Perfumers use preparations of lead, and especially white lead, in making certain cosmetics; and makers of belts and other similar articles, in blanching their materials; and both occasionally suffer in consequence.

In all manufactures of pottery, from the coarsest variety to faïence and porcelain, the oxides of lead are used. Different parts of the process of the manufacture of common earthen pottery are attended with great hazard to the health, and in our author's catalogue of twelve hundred and thirteen individuals affected with colic, fifty-four contracted the disease in this way. Formerly cases of this kind were much more frequent in Paris than now, and the disease was known as the "potters' colic." The general introduction of *faïence* and porcelain in the place of common pottery, by diminishing the number of persons employed in the manufacture of the last mentioned article, has now rendered the disease far less common.

The annals of science contain numerous facts which show that the use, as well as the manufacture, of glazed vessels may prove injurious. In Germany, in times past, cases of colic from this source have been so frequent as to arrest the attention of the public functionaries, and lead to the inquiry whether some substitute for lead might not be used for glazing vessels. When the varnish or glazing, however, is sufficiently hardened by the baking process, the danger from this source is greatly diminished, though fatal accidents frequently occur from the incautious use of glazed pottery.

In the manufacture of faïence (imitation porcelain), the same materials are used for glazing, and the process is similar, and the workmen suffer less frequently only because they are exposed to a less quantity of the emanations of lead. Formerly, manufacturers of porcelain suffered in the same way from the use of oxides of lead. But all the porcelain manufactured in France at the present day is enamelled with feldspar, and the oxides of lead are not used, though still employed in the manufacture of the soft porcelain of England.

The oxides of lead also enter into the composition of various kinds of glass. Refiners of lead suffer exceedingly, as also those employed in the foundries; those employed in making tin ware, occasionally, from the use of lead in soldering, as also jewellers and goldsmiths, casters in bronze and copper, and more frequently lapidaries, all of whom make more or less use of lead. Those employed in making printing-types, in which lead and antimony are used, are very often attacked with saturnine maladies, many of them cooking and taking their food in the apartment in which they work. Printers, too, are occasionally attacked, from the pernicious habit of holding their types in the mouth, especially while making the proof-corrections. Laborers in other arts, in which lead is employed, are sometimes attacked; but we cannot dwell longer on this subject, of which the author treats very fully, stating many interesting facts.

The inquiries of Des Planches establish the fact, before, however, well ascertained, that all who are exposed to the action of lead under the same circumstances, are not equally liable to be attacked with colic; and the same is true of the other forms of lead-disease. He endeavors to ascertain by what laws the attack is regulated, or what circumstances favor the deleterious action of preparations of lead on the human system. He thus considers the influence of season, climate, age, sex, constitution, mode of life or regimen. The result is somewhat curious.

There are certain seasons of the year in which cases of lead colic are rare, and others when they are very frequent. It is true the difference may be attributed in part to the greater or less number of laborers employed at different seasons. Thus, in the manufacture of white lead, there are sometimes whole months, in winter, when the work ceases; and, in very cold weather, more than one half of painters of buildings give up labor.

The table above given states the occupation of twelve hundred and thirteen individuals attacked with lead colic. Here is a table which exhibits the seasons of the year in which twelve hundred and seventeen were attacked:

January,	67	July,	190
February,	77	August,	127
March,	95	September,	92
April,	99	October,	81
May,	115	November,	78
June,	137	December,	59
		Total,	1217

Thus, the greatest number of cases is observed to occur in the hot months, from June to August; and that this is the case, the author, who often visited the workshops, is confident, after making all proper allowance for the fact above alluded to, that less labor is done in the cold months. The number of cases, it will be seen, increases regularly from January to July, when it attains its maximum, then decreases to the end of the year.

Nothing can be determined as to the influence of climate, from want of a sufficient number of facts; but, from analogy, it may be inferred that the warmer latitudes favor the development of the malady. The symptoms are not modified by climate.

The following table exhibits the relative ages of the 1217 individuals before referred to.

From 5 to 10 years,	8	From 40 to 50 years,	277
" 10 20 "	80	" 50 60 "	118
" 20 30 "	244	" 60 70 "	39
" 30 40 "	445	" 70 80 "	6
		Total,	1217

Thus, the greatest number of cases occurs between the ages of thirty and forty. The majority of those who labor in house-painting are between those ages. Children are rarely employed in most of the establishments in which preparations of lead are used in any large quantity. When they have been employed, they have been frequently and severely attacked. Thus, in the manufactory of fancy paper and cards by H. Hangrand in Paris, the five or six children employed are often attacked; the adults less frequently. In other cases, it has been proved that children are peculiarly susceptible of the poison.

The author feels confident that females are less subject to attack than males under the same circumstances of exposure. Individuals of all constitutions and temperaments are susceptible of the poison—the sanguine, the nervous, the lymphatic, being attacked in about equal propor-

tions. Habits of cleanliness, and good and nourishing food, favor exemption from attack, and intemperance in drink and excess of every kind predispose to it. An attack very often follows the next day or second day after a debauch. Monday is the day of the week when laborers in Paris are most frequently guilty of excess in drink, and the number of applicants for admission to the hospital on Tuesday and Wednesday is frequently unusually large.

Animals, as cats, dogs, horses, and poultry, are subject to colic of lead and other forms of lead malady, as well as man; and the deleterious effects of lead mines are occasionally observed at a considerable distance. But we have not room for detail.

The various symptoms and phenomena which attend lead colic are given by Des Planches, at great length, and with great minuteness, and are compared with the symptoms of analogous diseases with which it is liable to be confounded. He also enters into a discussion on the subject of what have been called vegetable colics, many of which are to be ascribed to lead. He considers particularly those of Madrid, of Devonshire, of Poitou, of Normandy, and of the Indies. But we are compelled to pass over the whole. The author gives a history of the treatment of the colic, which he found long established at the Hospital, and which had acquired great celebrity for success, and of his own method, which proved still more successful. He also gives a history of thirty cases in full, with the symptoms from day to day, the mode of treatment, and the result.

But colic seldom exists alone. It is generally accompanied, preceded, or followed by other forms of saturnine malady. We have already stated that the author makes four distinct forms of disease occasioned by lead. Of the first we have spoken. To the second the author, as we have seen, gives the name of arthralgy (pain in the limbs), an affection of a neuralgic character, produced by the introduction of lead into the system, and differing wholly from rheumatism, for which it has been sometimes mistaken. Sauvage calls it metallic rheumatism. Its history is involved in obscurity. Pain in the limbs is mentioned by several writers as accompanying the colic, but they have not described it in detail. Viewing it as symptomatic, or a sort of appendage to the colic, they have given little attention to it. Huxham, Dehaen, Dubois, and Gardane, regard pain in the limbs as precursors of paralysis, thus confounding two distinct diseases, both of which they make concomitants of the colic. The opinions of other writers are quoted, but they had studied the subject so imperfectly, and express themselves so loosely, that we derive little help from them.

Next to colic, arthralgy is the most frequent form in which disease occasioned by lead appears. Des Planches observed seven hundred and fifty-two cases of this form of the disease. The occupations of the individuals were as follows:

Manufacturers of minium,	104
" white lead,	220
" mine orange,	7
Painters of buildings,	163
" carriages,	33
Ornamental painters,	25
Grinders of colors,	43
Manufacturers of glazed and German cards,	7
Potters,	33
Refiners,	14
Plumbers,	10
Platers (in tin and lead),	3
Casters in copper,	1
" of printers' types,	38
Printers,	8
Manufacturers of shot,	6
Lapidaries,	27
Manufactuters of acetate of lead,	2
" nitrate "	2
" chromate "	1
Total,	752

This table shows that laborers in occupations which most frequently produce colic, are also most frequently attacked with arthralgy. There is one remarkable exception, however, to this rule. Laborers in the manufacture of minium are more subject to attack of arthralgy than colic; sixty-three, as the table shows, having been attacked with the latter, and one hundred and four with the former. It is also worthy of note, that out of two hundred and one individuals attacked with simple arthralgy, not accompanied with any other form of lead disease, sixty-three labored in minium. Yet the whole number of laborers in the manufacture of minium in Paris and the environs, does not exceed twenty. It is quite clear then that this substance more readily produces arthralgy than other preparations of lead.

What has been said of seasons, climate, age, sex, constitution, and regimen, in connection with the manifestation of disease in the form of colic, applies equally to its development in the form now under consideration. Of seven hundred and fifty-five attacked with saturnine arthralgy,

2	were between	5	and 10	years of age,
52	"	10	20	"
167	"	20	30	"
290	"	30	40	"
163	"	40	50	"
63	"	50	60	"
18	"	60	70	"
Total, 755				

The season of the year in which the attack took place is exhibited in the following table:

January,	32	July,	93
February,	45	August,	89
March,	62	September,	63
April,	69	October,	54
May,	74	November,	45
June,	91	December,	38
		Total,	755

The colic, and other forms of saturnine disease, predispose to this, though the violence of the colic has no influence. Observation shows, that a moderate or light form of it is as frequently followed with arthralgic pains, as its severe form. In the 755 cases above referred to, colic preceded in 205, and paralysis in 5; and in 1, the attack commenced on the brain. Usually, it is preceded by numbness and lassitude in the parts about to be invaded by it.

The phenomena which mark the disease, besides pain, are the impaired contractibility, and injury to the corresponding functions, of the parts affected. But pain is its grand characteristic. This varies not less in its nature, intensity, type, extent, and progress, than in the diversity of the parts which may prove the seat of it. It appears in all the limbs, the body, the head; more frequently in some parts than in others; most frequently in the lower limbs, next in frequency in the arms, then in the lumbar region. A circumstance of a singular nature has led some writers to assign the superior limbs as the seat of arthralgic pains. It is true, that lead paralysis most frequently attacks the superior members, and the pain being taken to be an accompaniment of this, has been supposed to have its seat in the same organs. The pain is more frequently seated in the muscles of flexion than in other parts (the reverse being the case in lead paralysis), as in the bottom of the foot, the posterior part of the leg and knee, the anterior part of the arm, the inside of the elbow, forearm, and hand; more frequently in the joints than in other parts of the limbs; rarely in the smaller articulations of the foot and hands.

It may occupy one or more of the parts already indicated, and some others. It sometimes extends along the whole length of the limb, or of the several limbs, but it has not in all parts the same intensity, nor the same character. It is often a sharp, lancinating pain, coming quick, like electric shocks. Sometimes the sensation is like that which would be produced by a burning coal applied to the part. Sometimes the patient complains simply of a prickly sensation, or inconvenient numbness, or a sense of fatigue or oppression.

The pain varies in intensity from a simple, unpleasant sensation to the most exquisite torture, like that of the coursing of boiling fluid through the veins. It seldom continues long in the same degree, but comes and goes at intervals, and is often aggravated or mitigated from moment to moment. When most violent, the individual is in a state of great agitation: his face is shrunken, he cries out and laments, incessantly changes his position, and compresses with his hands, or with bandages, the parts which are the seat of pain, in the hope of finding some alleviation of his sufferings. In a few minutes, perhaps, he is calm again. Various causes exasperate the pain, and its crises have no sort of regularity, but vary from a few minutes to whole hours. As a general rule, it is more severe during the night than during the day. It is often diminished by gentle pressure, or by simple friction, though the opposite effect is sometimes produced. Some local symptoms often appear, as spasms in the muscles, contractions, cramps, or rigidity; sometimes a tremulous movement, more or less distinctly marked, is observed in the parts. Motion in the parts affected often aggravates the pain, yet the patient, as before said, is continually changing his position in the hope of relief.

There is no heat perceptible to the hand of the physician, in the parts affected; no inflammation or swelling, at least, the author witnessed but a single case of it, and that not very marked. Yet all covering is some-

times rejected from the parts which are the seat of pain, and cold is sought as refreshing, though occasionally avoided as exasperating the pain. The patient will sometimes leap out of bed to cool his feet upon the floor, or in some other way endeavor to apply them to cold objects. The pulse is usually soft and regular. The skin, the muscles, and the bone, or the nerves connected with them, may, either of them, or all together, apparently be the seat of pain.

It is an important fact, and a singular one too, that in ordinary cases, arthralgy and paralysis do not occupy the same part. The former usually invades the inferior, the latter the superior limbs; what is more remarkable, the former usually appears in the muscles of flexion, the latter in those of extension. Sometimes, however, they occupy the same limb and the same part of it. Usually arthralgic pains disappear as paralysis developes itself. They occasionally cease suddenly, and paralysis appears in the same limb; but this is rare. Sometimes they commence and proceed together for a while, then one disappears, while the other continues for months, years, or even the whole of life.

Most authors have regarded the pain as a symptom of lead paralysis. Des Planches is fully of opinion that they are forms of disease wholly independent of each other, though they may exist simultaneously in the same individual.

Arthralgy seldom terminates in death, though an affection of the brain may succeed, or may supervene in the midst of it, which is exceedingly dangerous.

Those acquainted with arthralgy occasioned by lead, will very readily distinguish it from rheumatism, and common nervous and other pains, with which it is often confounded. Arthralgy differs from the colic of lead only in the parts in which it is seated, the latter having its seat in the organs of the interior life, the former in those of the exterior, or nerves connected with the external senses. The one is a perfect image of the other. In their causes, an exaltation of the sensibility, and derangement in the contractility and functions of the parts attached, they agree perfectly.

The two forms of diseases have been usually treated in the same way, but they require a treatment somewhat different. In simple arthralgy the sulphur bath is the best remedy, active medicines being added when the case is accompanied with a degree of colic. Five or six ounces of the sulphur of potash is the allowance for a bath at the Hospital of Charity. Other remedies are sometimes used, of which the writer gives a particular account in fourteen cases, the symptoms and treatment of which, from day to day, he subjoins.

(*To be Continued in our next Number.*)

ART. X.—*Pathological Hæmatology. An Essay on the Blood in Disease.* By G. ANDRAL, Professor of General Pathology and Therapeutics in the University at Paris, etc. etc. Translated from the French by J. F. Meigs, M. D., and Alfred Stillé, M. D. Philadelphia: Lea & Blanchard. 1844. 8vo. pp. 129.

ALREADY favorably known as a profound writer on general and pathological anatomy, and upon pathology in its relations to therapeutics, the name of M. ANDRAL comes to us under all the most prepossessing advantages. Objectionable as the medical literature of France is, in some respects, we find in Andral the representative of French medicine in its most philosophical and common sense aspect. Besides, he comes to this difficult inquiry not without much preliminary knowledge, acquired by years of previous devotion to investigations of a kindred nature; as, for instance, those conducted with M. Delafond on the composition of the blood of certain domestic animals, in health and disease, and with M. Gavarret on the modification in the proportion of some of the elements of the blood in diseases.

The table of contents consists of two chapters. The first treats—"Of the best method to pursue in the study of Pathological Hæmatology." The second treats of the blood in diseases: 1. Of the blood in Plethora; 2. Of the blood in Anæmia; 3. Of the blood in Pyrexiæ; 4. Of the blood in Phlegmasiæ; 5. Of the blood in Hemorrhages; 6. Of the blood in Dropsies; 7. Of the blood in certain diseases commonly called organic; and 8. Of the blood in Neuroses.

"HÆMATOLOGY is that branch of the natural sciences the subject of which is the study of the blood. The expression is not a new one in science: about a century since, an author now but little known, Thomas Schwenke, published, under the title of Hæmatology, a treatise as complete as it could then be, upon the blood considered in its state of health and of disease.*

"Before this author, and since his period, many works, some theoretical, some experimental, have been published on the blood; their simple enumeration would be a considerable undertaking, and one not without utility; such, however, is not the end that I seek; but I come to add to all these works, of various importance, a new one, in which I design to make known the alterations that the blood has presented to me in different diseases, under the triple view of its physical properties, and of its chemical and microscopic constitution. I shall endeavor to estimate the importance of these alterations in regard to semeiology and pathogeny; and I shall discuss finally the value of the methods that have been followed at different periods for the purpose of discovering the facts of pathological hæmatology."—P. 13.

The first chapter comprises a retrospective view of all the leading pathological dogmas presented in the history of medicine, which gives the reader a correct idea of the present state of the question under consideration. He commences thus:

"It was one of the dogmas professed by the school of Cos, that in order to explain the phenomena of health and of disease, we must take equally into consideration the solids which enter into the composition of the human body, the fluids

* Thomæ Schwenke Hæmatologia, sive sanguinis historia, experimentis passim superstructa, in 8° Hagæcomitum, 1748.

with which it is so abundantly provided, and the forces which control it. But few physicians however remained faithful to these principles, which Hippocrates has declared in several of his works, and particularly in his book on *ancient medicine;* and we find Galen reproaching his contemporaries with some bitterness, for having broken this beautiful ensemble of the ancient Grecian school, in order to interpose in their explanation of disease, some only the solids, others only the fluids, and others again only the forces which pervade the animate organized matter. And thus were determined from those ancient times, the three great points of view, which, now abandoned, and now again adopted, have produced the three systems of solidism, humorism, and vitalism."

This is a maxim, not less important in its application to physiology than to pathology, the full value of which has never been fully appreciated until the present day; and it is upon this broad principle that M. Andral has undertaken the present investigation.

Of all the animal fluids, the blood of course deserves the chief attention; for it is both the receptacle of all the fluids, which go to build up the system, and the source of all those secreted by the various organs. The day has passed by when the pathologist is to be satisfied with the mere inspection, with the naked eye, of the physical properties of the blood and its changes. The microscope is now invoked to determine its molecular structure, and the aid of analytical chemistry with the view to its chemical composition. At the same time, assistance should be derived from physiological experiments, by which we are enabled so to charge the composition of the blood, as to make it resemble the physical properties which it has in certain diseases. It was by such an experiment that M. Magendie demonstrated the agency exercised by the blood, when the amount of its fibrin is diminished, in the production of hemorrhages and of sanguineous congestions. But to appreciate the full force and bearing of these experiments, as regards chemical analysis and the use of the microscope, certain preliminary knowledge is absolutely requisite; as, for instance, a familiar acquaintance with the variations of the blood of the same species of animals in health. It will not do, for example, to judge of the composition of blood from its appearance based on previous knowledge of the blood of some other animal. Even in its normal condition, the blood of one animal has been found to contain twice as much fibrin as that of another; and as regards the red globules, a difference equally great has been observed. Like differences are also observed in the appearance of the diseased blood of different animals; and even some special appearances of the blood, universally regarded as indicative of certain morbid states in man, are found to pertain to the physiological condition of certain animals. Thus the blood drawn from a healthy horse, provided it is received from a large orifice and in a full stream, into a vessel which is neither too flat nor too large, will constantly present the *buffy coat*.

Our present limits will not allow us to enter into a detail of our author's views relative to the condition of the blood in the several diseased states of the system noted above. In the first place, M. Andral points out the modifications in the composition of the blood in *plethora* and in *anæmia*, which, in their less advanced stages, may be regarded as states of the organism not wholly incompatible with health.

As regards a peculiar constitution of the blood in *plethora*, the following is what analysis has taught our author:

"It has shown me in the first place that it is not true that, in plethora, the blood contains very much more fibrine than in any other condition; I have found, in reality, 2.7 of fibrine, as the average of this principle, in thirty-one bleedings performed upon individuals in whom the plethora was fully characterized. Some presented as yet no marked symptoms; in them the bleedings were simple measures of precaution; in the others, were observed vertigo, tinnitus aurium, palpitations of the heart, excessive difficulty of respiration, an injection as though apoplectic of the conjunctivæ of the eyes, and of the face, etc. Thus, in these individuals, the fibrine did not even quite equal the physiological mean. The symptoms of plethora do not depend then, as has often been repeated, upon an augmentation of fibrine in the blood. Consequently, in the point of view of the composition of the blood, plethoric individuals should not be more disposed than others to contract inflammations, and I do not fear to affirm that, if clinical facts be interrogated as to this, they will lead to the same conclusion; it is but a false analogy of symptoms which has caused it to be said that plethora disposed to the phlegmasiæ. The results yielded by the analysis of the blood are found here to be in perfect accordance with those to which clinical observation conducts.

The fibrine does not then sensibly augment in plethora; it remains within the limits of its physiological state, and does not even tend, in the greater number of cases, to mount towards the higher limit of this state.

The organic materials of the serum do not offer either, in plethora, any remarkable change of proportions.

The globules alone remain, and it is effectively the great elevation of their proportion which establishes in the blood the character of plethora; in the 31 bleedings to which I have already referred, I found for the mean of the globules the cipher 141; for minimum, 131; and for maximum, 154.

The blood of plethoric persons then differs from ordinary blood in the greater quantity of globules and the much less quantity of water that it contains.

The physical properties of this blood may be perfectly explained by the nature of the changes that it has undergone in its composition.

Thus, before coagulation, the blood of plethoric people is remarkable for its high coloration, which is in relation with the large proportion of globules it contains.

When we examine it after coagulation, we observe generally that the serum is more or less colored, that the clot is large, voluminous, of moderate firmness, and that it retains a large quantity of serum; we never find any buff upon its surface; at most we may sometimes observe there a thin and transparent pellicle, or some scattered irisations, if the blood has flowed very rapidly from the vein.

The considerable volume of the clot depends manifestly upon the large number of globules, and its softness, as well as the constant absence of the buff, depends upon the small proportion of the fibrine relatively to that of the globules.

The excess of globules in the blood of plethoric people coincides in them with a certain modification of the physiological state, and also with a certain number of pathological facts which seem to be a consequence of it.

Thus, all the functions are usually more active, and there is as it were an exuberance of life; digestion proceeds rapidly; respiration is favored by the great development of the thoracic cavity; the circulation is rapid, the heart beats with force; but it is an error to admit, as has been done, that in such cases, its pulsations may be accompanied by a bellows-sound. I myself not long since put forth this opinion; but a more attentive and a longer observation have convinced me that it is not so, and that consequently, in those cases where a bellows-sound had been heard in the heart or arteries of plethoric patients, it is because the diagnosis had been badly made and because there had been some other disease with the plethora.

While dwelling on all these modifications of functions which coincide with the plethoric condition, I do not wish to repeat here what is everywhere known; it was only necessary for me to speak of them, in order to make evident their coincidence with the fundamental modification that the blood undergoes in that condition, to wit, an augmentation of its globules: however, I will remark besides the

peculiar disposition that the brain then presents to become excited, the facility and at the same time the mobility of the emotions, without our observing at the same time those exaggerations or those aberrations of sensibility, and those nervous predominances, which we shall presently find to accompany almost necessarily an opposite state of the blood, to wit, the anormal diminution of its globules.

"The individuals whose blood contains an excess of globules are subject to some peculiar symptoms, of which no one has perhaps up to the present time given a very satisfactory explanation; thus, the vertigo, the dizziness, the tinnitus aurium, the heat of head that they experience, have been accounted for by congestions of blood towards the brain; but these congestions have never been, in like conditions, anatomically proved, and the mere passage of an excessive quantity of globules through the vessels of the brain appears to me a fact sufficient to account for them; but, singular circumstance, if it happens on the contrary that too small a number of globules traverse these same vessels, analogous symptoms will still present themselves, so that a quantity of globules either too high or too low disturbs in the same way certain cerebral acts.

"An excess of globules in the blood coincides also with the more frequent and more ready appearance of certain hemorrhages; I shall endeavor further on to give an explanation of this.

"Finally, in these cases of excess of the globules, it is not uncommon to see arise by intervals, a general increase of excitability of the organism, carried to such a point that a true fever may be the consequence. Vainly should we seek, in order to account for this, any alteration of the solids; they do not present any, and the fever ought then to be considered as having its point of departure in some state of the blood. But, let us take another case: suppose that coincidently with some inflammatory alteration of a solid, developed in an individual whose blood contains too many globules, there arises fever; this will then present a physiognomy altogether peculiar; it will be remarkable by the symptoms of high reaction which shall accompany it; it will present that type of fever called by Pinel angeiotenic; and this type will depend less upon the seat and nature of the local lesion, than on the condition of the blood itself. Venesection will certainly modify it, by acting on the blood, whose globules it will infallibly diminish; but though evidently useful in this point of view, it will have a much less direct influence on the inflammatory alteration which has produced the fever; for this alteration is connected with another modification of the blood, upon which bleeding has much less direct and immediate influence, as we shall see further on.

"The phenomena of plethora, viewed in connection with the composition of the blood in this condition, may enlighten us on the part played by the globules of the blood in the organism."—Pp. 40–3.

The blood in *anæmia*, contrary to the excess of its globular element in *plethora*, is precisely the very reverse, that is, the amount of its globules falls much below the physiological mean; and sometimes it diminishes to a proportion so low that it is difficult to understand how life can still be maintained.

"This diminution, in different degrees, of the globular elements of the blood is the fundamental character of anæmia, a condition which, therefore, in regard to the composition of the sanguine fluid, as well as in relation to its symptoms, is the opposite to plethora. According to the degree of the diminution of the globules, this condition is still compatible with a certain amount of health, or it becomes by itself a true morbid state, which may exist alone, or intervene as complication in all diseases. Thus, then, independent of the solids, we find one of the principles of the blood becoming distinct from all the others, exercising, sometimes by its augmentation, and sometimes by its spontaneous diminution, an influence such as to become the point of departure and the sole appreciable material element of a considerable number of diseases.

"I have found, as the average of the proportion of the globules, in 16 cases of commencing anæmia, the cipher 109, and in 24 cases of confirmed anæmia, the

cipher 65. I have constructed these averages only from cases of spontaneous anæmia occurring in the human race; I should have found a lower average in the sheep kind, which are also exposed to become anæmic, and which, in this condition, may have a blood so deficient in globules, that I have seen one of them which had but 15 of those corpuscles (see Memoir, etc.), whilst in the human race, the lowest proportion of globules that I have ever met with in spontaneous anæmia is 28. It is true that man possesses normally in his blood more of the globules than does the sheep species; whence it follows that, proportionally to the physiological condition, the minimum 28 of globules, found in the spontaneous anæmia of man, is very nearly equal to the minimum 15 found in anæmic sheep.

"Besides, it is necessary to distinguish several kinds of anæmia, according to the modifications of composition that they produce in the blood.

"In spontaneous anæmia, whether strongly marked or not, the globules alone are diminished: the fibrine and the solid matter of the serum have preserved their proportions; thus, in 16 cases of slight anæmia, I have found, as the average of fibrine, the cipher 3.0; and in 24 cases of affirmed anæmia the cipher 3.3.*

"In the anæmia which follows, more or less, abundant losses of blood, it may equally happen that we shall find the globules alone diminished; that is, indeed, the first effect of every hemorrhage; but if this augments or is renewed, there soon arrives a moment when the blood comes to lose equally its other principles, and we see the albumen and the fibrine of the serum diminish with the globules. It is in this way that in a woman who had suffered from very abundant attacks of metorrhagia, the blood contained only 21 in globules, 1.8 in fibrine, and 61 of solid matter of the serum. The water had risen to the enormous proportion of 915.

"Anæmia may also be the result of certain appreciable modifications of the organism which exercise an influence on the blood. In this case, the composition of that fluid appears to be the same as in spontaneous anæmia, that is to say, the globules alone are diminished, while the fibrine and albumen of the serum remain the same. This is what occurs in many pregnant women, whose blood loses its globules without losing its fibrine. The average of the globules is the same in them as we have found it in cases of slight anæmia.

"Why is it that woman is more exposed than man to this singular alteration of the blood in virtue of which, without any evident cause, the globules of this fluid are thus diminished in so strong a proportion? Why is she particularly exposed to it at a certain epoch of her life?

"Yet men also are sometimes attacked with spontaneous anæmia; they present in such a case all the symptoms which characterize the chlorosis of the female, and I have proved that their blood then suffers the same alteration of composition; it is with them equally the globules alone which diminish; the fibrine and the solid matter of the serum remain the same. I have met with examples of this spontaneous diminution of the globules both in men still young, and in others aged from forty to sixty years."—Pp. 44–5–6.

We would heartily commend this treatise to the attention of our readers, satisfied that its careful perusal would be rewarded with a rich return in sound practical knowledge.

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* The state of the blood of animals shows perfectly to what point the fibrine and the globules may remain isolated in their decrease or diminution; thus, the dog, whose blood contains much less fibrine than that of man and of all other animals that I have examined, is precisely the animal whose blood is most rich in globules. On the contrary, the horse, the sheep, the ox, whose blood contains more fibrine than that of man, and especially than that of the dog, have in their blood much less of globules than the two other beings.—(See the *Memoire sur la composition du sang de quelques animaux domestiques, etc.*) Besides, in the same species, those individuals who possess in their blood the most globules are not those whose proportion of fibrine necessarily rises highest, and *vice versâ*.

ART. XI.—*Lectures on the Theory and Practice of Midwifery*. Delivered in the Theatre of St. George's Hospital. By ROBERT LEE, M.D., F.R.S., etc. Illustrated with numerous wood Engravings. Philad.: Ed. Barrington & Geo. D. Haswell. 1844. 8vo., pp. 540.

A Practical Treatise on Midwifery, exhibiting the present Advanced State of the Science. By F. G. MOREAU, Professor of Midwifery and the Diseases of Women and Children in the Faculty of Medicine at Paris, etc., etc. Translated from the French, by THOMAS FORREST BETTON, M.D., and edited by PAUL B. GODDARD, A.M., M.D., *Lecturer on Anatomy, etc.* With eighty plates, comprising numerous separate Illustrations. Philadelphia: Carey & Hart. 1844. 4to., pp. 235.

Report on the Progress of Practical Medicine in the Department of Midwifery and the Diseases of Women and Children, during the years 1842–3. By CHARLES WEST, M.D., &c. London. 1844. 8vo., pp. 38.

IT strikes us that the number of works on midwifery published, in this country, within the last few years, is out of proportion with all the other medical departments. In addition to the standard volumes of Ramsbotham, Chailly, Churchill, and others, we have here two new volumes, with a pamphlet, all of the first order of excellence.

The lectures of Dr. Lee are of that practical character which so strongly recommends a medical treatise to the young practitioner. With the strictly philosophical view of the various branches of the subject on which he treats necessary in all professional works, there is combined a practical minuteness in the minor matters of importance relating to parturition, which can only be the result of great experience in the lying-in room; while a proper estimate is placed upon that species which appears to be merely a matter of scientific curiosity. Vide p. 216, 217, et passim. The lectures upon the use of instruments we would especially recommend to the study of those who wish to become skilful in their use, and who, at the same time, are desirous to possess themselves fully of the principles on which instruments are to be employed.

Moreau's treatise is another valuable work upon the science of midwifery, with eighty of the most splendid lithographic plates that we have ever seen. These illustrations are engraved with so much beauty and accuracy, and upon so large a scale, that they cannot fail to present to the eye the precise relation of the fœtus and of the parts engaged in labor, under every condition and circumstance, from the commencement of the state of natural parturition, to the most difficult and complicated labor. The profession are greatly indebted to French industry in pathological and special anatomy for the continued advance in the science of obstetrics; and the work before us may be regarded as the completion of all that has accumulated in this department of medical science, greatly enhanced in value by many valuable original suggestions, to the proper arrangement of which the author has devoted a great amount of labor. The translation is faithfully and elegantly done, and the work will be a valuable addition to the medical literature of our country.

The last, Dr. West's Report, is a reprint of a valuable and elaborate paper which appeared in the thirty-fourth number of the British and Foreign Medical Review. It presents us with a brief analytical notice of the principal publications on the subjects to which it is devoted which

appeared between October 1st, 1842, and December 1st, 1843. A comprehensive digest of the various medical publications with which the press teems is becoming more and more necessary to those of the profession whose time is to a great extent engrossed by the details of practice, and who yet desire to keep themselves *au courant* with professional literature. Such a digest Dr. West's paper affords. He has evidently spared no pains to make it complete; and, at the same time, his knowledge of the various subjects discussed, is sufficient to enable him to appreciate the value of the various contributions to the science, to decide what are new and what old, and to refer to the various sources of information by which the statements of the different authors may be confirmed or corrected. It is altogether a very useful and creditable paper.

Our limits, on the present occasion, will not allow us to say more. We commend these three works heartily to our professional brethren.

ART. XII.—*A Treatise on the Nature, Causes, and Treatment of Erysipelas.* By THOMAS NUNNELEY, Lecturer on Anatomy, Physiology, and Pathology, in the Leeds School of Medicine, etc., etc. Philadelphia: Ed. Barrington & Geo. D. Haswell. 1844. 8vo. pp. 235.

THIS is another reprint in the *Select Medical Library*, edited by John Bell, M.D. On a previous occasion, we drew attention to the singularly happy exercise of judgment displayed, at all times, by this learned brother in his selections of works for the profession on this side of the Atlantic; and this opinion has, in the interim, been still more decidedly confirmed. So judicious has Dr. B. been in all these decisions, that we are warranted in saying, from no little knowledge on the subject, that the simple fact, that a volume has appeared in his "Library," secures it a character for excellence, which could not be more than attained by a simultaneous review in its favor by all the medical journals in the country.

For more than a year past, the various medical journals scattered throughout our vast domain, have been teeming with accounts of epidemic erysipelas, under the name of Black Tongue, etc., which has prevailed in various portions of New England and of our Western region, assuming sometimes a highly malignant form. The present appearance of this treatise, describing the disease in all its varieties, and giving the best modes of treatment, is consequently opportune in the highest degree. As these accounts have been judiciously incorporated into the American Edition, the monograph is thus rendered doubly acceptable to the profession here, in consequence of its completeness and adaptation to our present wants.

"Additional matter on the subject of Epidemic Erysipelas, as this disease has recently shown itself in New England and in the State of Indiana, is introduced into this first American edition of Dr. Nunneley's Treatise. The facts thus revealed will be found to be important, in relation to the connection between erysipelatous inflammation of the skin and that of the serous and mucous membranes, and, also, between erysipelas and puerperal peritonitis."

As regards the meaning attached by our author to the word, *Erysipelas*, the following extract from the preface will serve to show it in a general way:

"Throughout the following pages, to the word Erysipelas a more extended signification is attached than frequently is assigned to it. Instead of being restricted to an affection of the skin alone, or even of the skin and subcutaneous cellular membrane, it is rather used as a divisional term, comprising several species. By some, this may be thought too vague and indefinite; perhaps it may be so, but the Author hopes that his meaning will be sufficiently apparent; and as he is by no means wedded to the expression thus employed, or thinks it faultless, when a better is suggested he will be happy to adopt it. No one can be more impressed than himself with the propriety and advantage of accurately defining terms, and constantly using them as defined; this being observed, the exact signification attached to a word is not likely to give rise to confusion and obscurity. What he wishes is, to show that many complaints which have received distinct names, and the effects of which are principally manifested in different tissues, are, in reality, of the same nature, and consequently are but modifications of each other. The word phlegmon has for long been generally employed as applicable to inflammations of various textures; and, in the same manner, the word erysipelas is now employed, as indicating a contrary condition or type, from phlegmon. If the term phlegmonous inflammation be allowed, he sees no reason why that of erysipelatous should not also be permitted. Indeed, it has already, by more than one writer, been so employed."

He thus uses the term, *Erysipelas*, in an enlarged generic sense, under which he thinks the following diseases may be naturally grouped:

"I.—*Erythema*, with its various species according to the classifications of Willan, Bateman, and Rayer; except the erythema intertrigo, fret, or erosion of the skin, which certainly has no relation to the other species of erythema. It is purely a local affection, produced solely by local irritants, wholly unconnected with constitutional symptoms, and not requiring constitutional remedies. It is also doubtful if erythema nodosum should be included: the local affection appears to be inflammation of the periosteum, the skin being only secondarily involved. How far the constitutional tendency and symptoms may approach to those attending erysipeloid affections is not quite certain.

"II.—*Erysipelas;* in the forms commonly described under the term, whether of the head and face, trunk or extremities, idiopathic or sympathetic.

"III.—*Diffuse inflammation of the cellular membrane;* as the term is used by Dr. Duncan, Jun.,* who first most distinctly called attention to this form of complaint.

"IV—*Puerperal Fever.*

"V.—*Diffuse inflammation of the serous membranes;* which is perhaps more frequently seen in the peritoneum; especially after wounds of it or in its neighborhood, as after the operation for strangulated hernia or stone.

"VI.—*Diffuse inflammation of the mucous membranes;* this form is more frequently seen about the fauces, as in some forms of angina pharyngea vel laryngea.

"VII.—Very possibly some forms of *Arachnitis* belong to this class.

"VIII.—*Diffuse Phlebitis*, and also this form of inflammation of the *Absorbents.*

"In a work like the present, professing principally to treat of erysipelas, as the term is popularly understood, it would evidently be improper, as well as unnecessary, to enter into a detail of the various symptoms of these disorders; they must be sought for in the different works devoted to them, and under the respective words in the admirable Cyclopædias and Dictionaries lately published. All that is necessary on the present occasion is to prove their identity. If it can

* Edinburgh Med. Chirg. Trans., vol.

be shown that the causes which produce them are the same; that by one form of affection another may be induced; that two or more forms of the complaint exist together, not only as epidemics, but at the same time, or in some instances, interchangeably in the same individual; that some of them run so much one into another, that those who are most anxious to separate them are unable to do so; that the constitutional symptoms are for the most part the same; that allowing for the variety in the organization and functions of the different textures, the local changes are the same; and that one general plan of treatment is adapted for all: it may, I think, be fairly assumed as proved, that the affections are identical in their nature; at least, according to all rules of philosophy, which forbid us to admit separations and distinctions where phenomena are the same."

But the details under these several heads afford much curious and instructive information, especially as regards puerperal fever. Upon this subject, we have already given some exceedingly interesting facts in our analysis of the last Registration of England; and as the facts observed in this country are precisely of the same character, the deductions made in both countries, find the strongest confirmation. Among the additional matter supplied to the volume by Dr. Bell, we find the following remarks:

"*Connection with Puerperal Peritonitis.*—In connection with the foregoing remarks, it may not be amiss to present a very brief view of that class of cases to which this statement would seem to allude—*puerperal peritonitis;* not that this disease can with propriety be called erysipelas, but that its fatality is in some manner connected with the prevailing epidemic. It has long been a mooted question, whether puerperal fever was communicated by contagion or by some other agent. Many, at the present time, deny the possibility of contagious communication, while others in our own section have refrained from obstetrical practice, convinced that they have carried the disease from one patient to another. Certain it is, that while many highly respectable gentlemen, extensively engaged in practice, deny the contagiousness of either erysipelas or puerperal peritonitis, others, among whom is Dr. Calvin Jewett, admit its contagious character. The latter remarks:—'I do not believe the disease (erysipelas) contagious like small-pox or measles, it approaches more nearly epidemic typhus. I speak of the disease generally, not of puerperal cases, for these are unquestionably communicated by individuals, whether physician or nurse, who have been much with the disease, to women, at or immediately after childbirth. I believe the clothing, not the hand of the physician, communicates the disease. *I wish I were mistaken on this point.*'

"If contagion does not contribute to the production of this malady, the question forcibly suggests itself, how it happens that the *proportion* of puerperal cases is sensibly increased during the epidemic prevalence of erysipelas? With ordinary care, perfect seclusion, and guarded from the influence of infectious causes, the patient might have some hope of escape, if the disease was communicated by the usual agents of infectious diseases. But not so; entire seclusion and even living out of the circle of infected atmosphere, is no safeguard, if during labor, the patient is attended by a physician, who is engaged in daily practice among individuals affected with erysipelas or puerperal peritonitis. Some cases corroborative of this statement will be given, before we leave this subject.'"

The capability of the communication of puerperal peritonitis on the part of the physician and nurse, is unfortunately a fact too clearly established to admit of a doubt. In 1842–3, erysipelatous fever, of an epidemic character, prevailed in the northern sections of Vermont and New Hampshire, described by Dr. Charles Hall, of Burlington, Vt., and George J. Dexter, of Lancaster, N. H., in a joint paper communicated to

the *Amer. Jour. Med. Sciences*, and by Dr. J. A. Allen in the *Boston Med. and Surg. Journal* (Nos. 2, 4, 7, 1844). In the Western Lancet, Nov. 1843, is contained a paper by George Sutton, M. D., entitled "Remarks on an Epidemic Erysipelas, known by the popular name of '*Black Tongue*,' which recently prevailed in Ripley and Dearborn Counties, Ia.," where it commenced in November, 1842.

Did our space allow, it would be both interesting and profitable to enter into a full analysis of this work; but we would advise our readers, one and all, to purchase it, and thus judge of its value from a personal examination of its pages.

It is certainly a curious fact that mere prickings of the finger, in dissections of bodies affected with this epidemic erysipelas, should be followed by fatal disease. One physician in Vermont, and two in Massachusetts, thus sacrificed their lives.

The reader will be enabled, from this hasty sketch, to form some idea of the value of this treatise, which we regard as particularly deserving of patronage. Besides, it merits commendation on the score of its external features of paper and type.

Art. XIII.—*Eleventh Annual Report of the Trustees of the State Lunatic Hospital at Worcester.* December, 1843. 8vo. pp. 110.

Abstract of the Returns from the several Towns, Jails, and Houses of Correction, in this Commonwealth [*Massachusetts*], *concerning the Condition of Pauper Idiots and Lunatics, in Alms-Houses, Jails, &c., for the year ending January*, 1843. 8vo. pp. 84.

First Annual Report of the Secretary of the Commonwealth to the Legislature: Under the Act of March, 1842, *relating to the Registry and Returns of Births, Marriages, and Deaths in Massachusetts.* February, 1843. 8vo. pp. 120.

Second Annual Report of the same, for the year ending May 1st, 1843. 8vo. pp. 88.

Address to the Members of the Massachusetts Medical Society upon the Question of engaging in a Series of Statistical and other Investigations, which would be advantageous to Medical Science and Public Hygiène. 8vo. pp. 16.

The Common School Journal for July 1, 1844. Boston.

Reference has already been made, in our last No., in a notice of the Fifth Registration of England, of the commendable position taken by the good old Bay State in the investigation of such medical questions, as will serve to ameliorate the condition of the lower classes, at the same time that light will be thrown upon many of the most interesting questions in political economy. That this is right and becoming on the part of this ancient Commonwealth, in consideration of her prominent intellectual position in our confederacy, does not admit of a single doubt. Indeed, it may justly be regarded as an imperative duty, demanded from her relative position, to lead and direct in such public measures as make an appeal to man's higher nature; nor has she failed to respond in the

proper spirit, as appears from the array of measures now under prosecution, as shown at the head of this article.

It was our good fortune to be present, at Boston, at the last annual meeting of the State Medical Society, in the latter part of May, when we participated in the pleasures of their annual dinner with some 400 of these Fellows; and we may add, without the suspicion of being disposed to flatter, that, taken in the aggregate, physically, intellectually, and morally, they would compare, so far as outward signs are indicative of the inward man, with any similar body of men it has ever fallen to our lot to survey.

It is not our intention to enter into the special merits of each of the Reports which head this article; but our object in throwing them under the same head, is, to direct the attention of the profession throughout our land to the noble example set by the State of Massachusetts—an example worthy of emulation by her sister States. Our present limits will not allow of more than the most general notice of these highly interesting papers; but as we have treasured up their results in the more permanent form of a volume, that we purpose very soon laying before the public, no opportunity will be wanting hereafter to induce us to resume what is, with us, a favorite topic.

In regard to the State Lunatic Hospital, the Trustees report:

"The experience of the past year has added new and most convincing proof of the enlightened wisdom and humanity which has established and supported this institution, and which has here erected the noblest monument of the public charities of Massachusetts.

"In addition to the liberality of the State, and the assistance and encouragement of benevolent men, this asylum has enjoyed, in an eminent degree, the smiles and guardianship of that kind Providence without whose blessing the best directed efforts of the wisest mortals are unavailing. From the laying of the foundation stone to this day, Heaven seems to have directed the undertaking, and to have crowned with its mercies the entire work. Not to see it, we should be blind; not to acknowledge it, we should be most ungrateful.

"Accompanying this are the Reports of the Superintendent and Treasurer. They contain the most full, accurate and satisfactory statements of the policy and condition of the hospital, and the receipts and expenses of the treasury.

"The monthly visits, required by law, have been made principally by the members of the Board who reside in Worcester, and a very large portion of our labors and cares have devolved upon them—labors and cares which would have been too onerous, had they not been lightened and made cheerful and pleasant by the quiet, order, neatness and good management, which have uniformly pervaded the whole establishment.

"Eleven years have passed since this hospital was opened for the reception of patients; in that time there have been received one thousand seven hundred and seventy-seven patients.

Committed by the Courts,	1311
" by Overseers of the Poor and friends	466
The number of Discharges is	1522
" " " Recoveries is	792
During the last year there have been in the hospital, different patients,	458
At the commencement of the year,	238
Admitted during the year,	220
Now remaining,	255
Recovered,	116
Died,	22

Discharged improved,	32
Discharged as harmless and incurable,	24
Sent to house of Correction, for want of room, by Trustees,	2
Discharged by the Courts, as incurable and dangerous,	6
Discharged by Trustees' Private Board, incurable, for want of room,	1
Average number of patients in the hospital for the year,	244 1-6

"Of those who have recovered, eighty-four were cases of less duration than one year, and thirty-two of longer duration.

"Application has been made for one hundred and fifty-seven who were not received at the time, and for ninety-eight who have not been received at any time, for want of room.

"The expenses of the hospital have been $27,914 12, more by $367 25 than in 1842; and the average number of patients has been greater, in about the same proportion.

"The books of the State treasury show that the Commonwealth has maintained, in other hospitals, one hundred and six State paupers during the past year, at an expense of $9511 42. There have been here during the same time, fifty-three State paupers, for the board of whom nothing is paid. If the State should allow this hospital one hundred dollars per annum, for the board of its patients, a great saving would be made in the price of the board of all other patients, and no annual appropriation from the public treasury would be necessary. The amount that the hospital would have received from the State for State paupers the past year, at the rate paid by towns, is about four thousand dollars."—Pp. 3, 4, 5.

"The Hospital has now been open nearly *eleven* years. It has received 1777 patients, discharged 1522, of whom 792 have recovered and 136 have died; the remainder, 594, have been discharged in various conditions, some in a state of convalescence, some greatly improved, others less improved, and many harmless and incurable, or dangerous and incurable, who were sent away for want of room. 255 patients remain, who exhibit all the different forms of disease, from curable insanity to hopeless idiocy."—P. 29.

"No State in the Union has made such ample provision for its insane as Massachusetts, having had 458 in its State Hospital, 271 in the McLean Asylum, and 157 in the Boston Lunatic Asylum,—in all 886; and buildings are now being erected for at least 150 more, which will give room for 1036."—P. 32.

The superintendent of this institution is Dr. Samuel B. Woodward—a name inseparably associated with the history of Lunatic asylums in this country, and one also identified with the history of the amelioration of the condition of the insane, characteristic of the present age. Read the following language of the Trustees, who say that they—

"Would leave unperformed the most grateful part of their duty, if they omitted to record their most full and decided testimony to the zeal, fidelity and assiduous devotion of the Superintendent. His master spirit has pervaded the whole establishment, and he seems to have impressed on all laws of kindness and love. By his gentleness and courtesy, no less than by his skill and energy, has he given a tone and character to his hospital which have made it a model and a praise in our own and in foreign lands. Into how many wounded hearts has he poured the healing balm; to how many anxious and sorrowing bosoms has he brought consolation and peace? In this world such public benefactors have an ample reward, in the gratitude of those they have blessed; in the coming world, where there are no disturbed fancies and no clouded vision, they shall have fulness of joy and pleasures for ever more."—P. 10.

The favorable change in the whole treatment of this unfortunate class

of the human family, just adverted to above, is a feature in their history that belongs, in fact, to the present generation. What is there, in truth, at which the heart of the philanthropist has more cause for rejoicing, than at this improved condition, especially in the United States? Instead of the dungeon and chains and stripes, we find now everywhere free exercise in the open air substituted, in connection with the judicious alternation of bodily labor, amusement, and even literary occupation; and thus, as moral restraint has taken the place of physical, so we find, instead of the irritation and exasperation of feelings excited by the latter, the most happy results as evinced in the soothing effects produced by care and kindness.

Dr. Woodward tells us of the parties held twice a month by the Matron, in a large hall, "at which times from 75 to 100 females assemble, and unite in labor, and enjoy social intercourse." The work done at these parties is for the advantage of the institution; and many beautiful articles are here manufactured, and kept for sale to increase the library.

"In the same hall we now hold our dancing parties, twice a month. These parties have never before been so well conducted, or afforded so much real enjoyment. From 75 to 100 individuals, of both sexes, assemble here to spend a few hours socially, to enjoy a season of relaxation from the tedium of confinement, to dance, and to witness the amusement, which seems to be as much enjoyed by the spectators as by those who partake of the sport of the evening. These parties are always conducted by the assistant physician, and the utmost order and decorum prevail at them as well as at those under the supervision of the matron.

"Every Saturday evening a religious meeting is held in this hall, which continues one hour. The meeting is conducted by the chaplain, who explains, in a familiar way, some portion of scripture; prayers are offered, and sacred music increases the interest of the season."—Pp. 78, 80.

* * * * * * * * *

"The intercourse of the sexes in institutions of this kind is as favorable as elsewhere. The influence they have upon each other everywhere else, in schools, churches, and the social circle, when judiciously admitted, is equally favorable here. I would increase rather than diminish it, and in the hospital would encourage walks, games, and especially dances, in which the intelligent and convalescent patients should be brought together, under the guidance of their attendants, and hold free and pleasant intercourse. Especially would I have them assemble together for religious worship on the Sabbath, at singing parties, and other seasons of social enjoyment.

"The influence of the sexes is reciprocal everywhere, and, when properly directed, has a favorable effect on both."—P. 80.

As regards the influence of labor and religious exercises upon the insane, Dr. W.'s experience, from year to year, increases his estimation of their value. For the purpose of labor, the garden and the farm present ample opportunities.

"The laborers are the happiest and most healthy class of patients in the hospital; many convalescents would be completely miserable without labor, and their recovery would be retarded, if not prevented, if they were deprived of it.

"When the excitement of a violent patient has so far subsided as to enable him, with great effort, to exercise self-control, he then calls for labor, and will exert the excitement in this way, advantageously to himself and the institution, which without it he would find it necessary to expend in noise,

violence, and mischief. This holds equally true with both sexes. Labor under such circumstances is not only a safety valve to expend diseased excitement, but it puts the patient into accustomed channels of thought and action, and the mind performs rationally at labor, if insane everywhere else.

"Convalescents are not the only persons benefited by useful employment; a large class of the incurable insane are rendered healthy and happy by it. What there is of mind remaining is kept bright, and prevented from sinking into dementia by labor. No persons about the hospital are more gratified to witness production, profit and improvement, than the laboring insane. They take delight in viewing the luxuriant crops in the fields and gardens, and feeling that they have contributed their share to what goes for the general good.

"The melancholy patients are benefited no less than the maniacal, by labor. They need the exercise, and particularly require the mind to be diverted from gloomy contemplations, and to be made active in some way that will interest and excite them."—Pp. 81, 82.

The library is also a source not only of amusement but of occupation. But it is in the Vermont asylum that the literary spirit has been carried even to the *cacoëthes scribendi;* for, not content with the enjoyment of being merely readers, they actually publish a small newspaper, called the "Asylum Journal." As they thus receive in exchange more than two hundred newspapers, besides many other periodicals, the superintendent is enabled to furnish every patient with a newspaper from his own immediate neighborhood, at the same time that every politician has one of his own political views, and every sectarian, one adapted to his own religious sentiments.

Our present limits will not allow us to enter upon the remaining subjects indicated by the titles of the works which head this article. Should we succeed in attracting the attention of other States to these important objects of medical inquiry, we shall have accomplished our greatest aim. Let other States follow the noble example of Massachusetts, and we shall soon realize the grand desideratum of a NATIONAL *Registration of Births, Deaths, and Marriages, with the specified cause of death.*

But we must say a word, in conclusion, relative to the statistical project now in operation, under the auspices of the members of the Massachusetts Medical Society, as regards the development of the hygiênic conditions of the different classes composing the population of that State. From the Address cited at the head of this article, of which Dr. John D. Fisher was chairman, we make the following extract:

"There is reason to believe that there is a great difference in the value of life in the different conditions of society. The Report of the Poor Law Commissioners upon the sanitary condition of the laboring classes of England and Wales, shows, that while the families of gentlemen, merchants and professional men, average a life, in different places, of from 35 to 50 years; laborers, operatives, mechanics, servants, and others similarly situated, also their wives and children, averaged a life of only 15 to 35 years in various places. This difference of the value of life is not confined to England and Wales—we have obtained an analysis of the ages, and also of the domestic and social condition of 1767 persons, who have died in Dorchester within the last 27 years. By this it appears that the average duration of life in the families (including father, mother, and children) of laborers, fishermen, journeymen mechanics and factory operatives, was 27 yrs. 5 mos.
Mechanics who carry on business on their own account, . 29 " 6 "
Merchants, capitalists, professional and salary men, amateur farmers, ... 33 " 2 "
Farmers who own and cultivate their lands, ... 45 " 8 "

"This difference is not chargeable to the occupations merely, for it was found the most among the little children at their homes, as will be seen in the following table.

PERIODS OF LIFE AT WHICH DEATH TOOK PLACE.	NUMBER OF PERSONS DYING IN THE FAMILIES OF				
	Laborers, &c.	Mechanics.	Merch'ts, &c.	Farmers.	Total.
Under 2 years, . .	161	115	127	33	436
" 5 " . .	203	148	172	50	573
" 20 " . .	244	191	235	63	733
" 70 " . .	462	351	499	191	1503
Over 70 " . .	51	50	90	73	264

PROPORTION OF DEATHS AT EACH PERIOD TO ONE THOUSAND IN EACH CLASS.

PERIODS.	Laborers, &c.	Mechanics.	Merch'ts, &c.	Farmers.	Total.
Under 2 years, . .	313	286	215	124	246
" 5 " . .	395	368	292	188	324
" 20 " . .	474	476	398	237	410
" 70 " . .	901	875	847	735	850
Over 70 " . .	99	124	152	274	149

"The great difference of mortality between the children of the poor and of the comfortable farmer, cannot be caused by the employment of the head of the family. There must be a cause or causes connected with the domestic condition or management to produce this discrepancy. But it is yet a question to be resolved by further and wider observation, whether this, although a general fact in England and Wales, is here more than a particular fact in regard to Dorchester. A similar analysis must therefore be obtained of the mortality of many towns in all parts of the Sate, in order to determine whether life is meted out in such various proportions to the different classes of society throughout the Commonwealth."

The whole subject is now in the hands of a committee, not only every way competent for the investigation of this most important inquiry, but, what is more to the point, ardent in its prosecution. This committee consists of Drs. John D. Fisher, Edward Jarvis, and O. W. Holmes.

The law of the registration of births, deaths, and marriages in Massachusetts, which has now been in operation two years, of which we have the published results, has not been attended with those important consequences which may have been anticipated. This, however, was the case equally in England, during the first and second years of their present admirable system of Registration; but Massachusetts, as has been abundantly illustrated in the third, fourth, and fifth annual reports of England, has now arrived at the point when the most important results may be realized.

We are glad to learn from the No. of the "Common School Journal," quoted at the head of this article, that the duty of collecting the births in every town and city has, by a late law of the State, been assigned to the school committee. This new registration law, as the acquisition of all

the attending facts required by the registration, is thus made comparatively easy, we look upon as highly important. It reads as follows:

"*Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:*

"SECT. 1. The clerks of the several cities and towns in this Commonwealth shall, annually, in the month of June, transmit to the secretary of the Commonwealth a certified copy of their record of the births, marriages, and deaths, which have occurred within their respective cities and towns during the year next preceding the first day of said month.

"The births shall be numbered and recorded in the order in which they are received by the clerk. The record of births shall state in separate columns the date of the birth, the place of birth, the name of the child (if it have any), the sex of the child, name and surname of one or both of the parents, occupation of the father, residence of the parents, and the time when the record was made.

"The marriages shall be numbered and recorded in the order in which they are received by the clerk. The record of marriages shall state in separate columns the date of the marriage, the place of the marriage, the name, residence, and official station of the person by whom married, the names and surnames of the parties, the residence of each, the age of each, the condition of each (whether single or widowed), the occupation, names of the parents, and the time when the record was made.

"The deaths shall be numbered and recorded in the order in which they are received by the clerk. The record of deaths shall state in separate columns the date of the death, the name and surname of the deceased, the sex, condition (whether single or married), age, occupation, place of death, place of birth, names of the parents, disease or causes of death, and the time when the record was made.

"SECT. 2. The school committee of each city or town shall, annually, in the month of May, ascertain from actual inquiry or otherwise, all the births which have happened within such city or town, during the year next preceding the first day of said May, together with the facts concerning births required by the first section of this act, and shall make an accurate return thereof to the clerk of such city or town, on or before the last day of said May; and the said school committee, or other person authorized by them to make such returns, shall be entitled to receive from the treasury of such city or town, five cents for each and every birth so returned.

"SECT. 3. Every justice, minister, and clerk, or keeper of the records of the meeting wherein any marriages among the Friends or Quakers shall be solemnized, shall make a record of each marriage solemnized before him, together with all the facts relating to marriages required by the first section of this act; and each such justice, minister, clerk or keeper shall, between the first and tenth days of each month, return a copy of the record for the month next preceding, to the clerk of the city or town in which the marriage was solemnized; and every person, as aforesaid, who shall neglect to make the returns required by this section, shall be liable to the penalty provided in the eighteenth section of the seventy-fifth chapter of the Revised Statutes.

"SECT. 4. Each sexton or other person, having the charge of any burial ground in this Commonwealth, shall, on or before the tenth day of each month, make returns of all the facts required by the first section of this act, connected with the death of any person whose burial he may have superintended during the month next preceding, to the clerk of the city or town in which such deceased person resided at the time of his death. And such sexton, or other person, shall be entitled to receive from the treasury of the city or town to which the return is made, five cents for the return of each death made agreeably to the provisions of this act.

"SECT. 5. The clerk of each city or town shall be entitled to receive from the treasury of such city or town, eight cents for the record of each birth and death: *provided* such clerk shall comply with this act in all respects.

"SECT. 6. It shall be the duty of the clerks of the several cities and towns, to

make such distribution of blank forms of returns as shall be designated by the secretary of the Commonwealth.

"SECT. 7. The secretary of the Commonwealth shall prepare and furnish to the clerks of the several cities and towns in this Commonwealth, blank books of suitable quality and size, to be used as books of record, according to the provisions of this act, and also blank forms of returns, as herein before specified, and shall accompany the same with such instructions and explanations as may be necessary and useful; and he shall receive said returns, and prepare therefrom such tabular results, as will render them of practical utility, and shall make report thereof annually to the Legislature, and generally shall do whatsoever may be required to carry into effect the provisions of this act.

"SECT. 8. Any clerk who shall neglect to comply with the requirements of this act, shall be liable to a penalty of ten dollars, to be recovered for the use of any city or town where such neglect shall be proved to have existed.

"SECT. 9. An act entitled "an act relating to the registry of births, marriages, and deaths," passed on the third day of March, in the year one thousand eight hundred and forty-two, is hereby repealed.

"SECT. 10. This act shall take effect from and after its passage. [*Approved by the Governor, March* 16, 1844.]"

We would here make an appeal, in conclusion, to our own State—the noble State of New York—which is ever foremost in all great projects relative to man's advancement. Urged on by the noble example of her sister State, can she, for a moment, hesitate to adopt a measure every way calculated still more to develope her natural resources? As it is an admitted axiom, *that health is essentially necessary to the happiness of society*, the adoption of a registration of births, deaths, and marriages, with the specified cause of death, rests upon her as an imperious obligation. Equally does the obligation rest upon the State Medical Society to urge this great measure upon the attention of our Legislative body; and in first bringing it before the public, let the Medical Society of the City and County of New York take the lead. Such a course, at the present time, when all restrictions on the practice of medicine, in this State, have been removed by legal enactment, is the more necessary; for now, when the public are no longer legally defended against their own rashness and folly as respects the imposition of quackery, which restrictions, however, have been generally regarded by that public as the privileges of what have been called the regular faculty, it behoves the latter to give such evidence of their regard for the common welfare as will enlighten the public mind upon the subject of public health. In the language of Southey—

"Man is a dupeable animal. Quacks in medicine, quacks in religion, and quacks in politics, know this, and act upon that knowledge. There is scarcely any one who may not, like a trout, be taken by tickling."

ART. XIV.—*Medical and Physiological Commentaries.* By MARTYN PAINE, M.D., A.M., Professor of the Institutes of Medicine and of Materia Medica in the University of New York, Member of the Royal Verein Für Heilkunde in Prussen, etc. Vol. III. New York: Printed for the Author. 1841-1844.

THIS volume, which the author has issued as the third volume to his *Medical and Physiological Commentaries*, consists chiefly of pamphlets in their defence against the criticism of two distinguished European Medical Reviews; but there are several other papers, all of which, however, are not without some relation to the Commentaries. "The more the author has deliberated upon the justice and propriety of thus collecting his defensive essays," he tells us, "the greater have become his reasons for adhering to the design, as expressed in these papers, of incorporating them with the work assailed, 'that proper issue may obtain between the reviewer and the author.'"

In addition to the pages devoted to these defensive essays, the volume contains dissertations on the "Philosophy of Vitality and the Modus Operandi of Remedial Agents," a "Discourse Introductory to a Course of Lectures on the Institutes of Medicine and Materia Medica," a "Lecture on the Improvement of Medical Education in the United States," a Defence of this last lecture, Letters on the Cholera Asphyxia of New York, etc.

"Four years," says Dr. Paine, "have passed since the publication of the two volumes with which the present is now connected. During that period the author has been laboriously employed in the investigation of the several topics whose discussion makes up the Commentaries; has prepared for publication a large work on the Institutes of Medicine; has delivered three courses of lectures upon the Institutes; has carefully reviewed the Commentaries themselves, and has been actively engaged in professional business. With this additional experience and information, and with all the light of criticism, and the march of chemistry, before him, the author avers that there is not one line in the Commentaries which he would wish to erase or to amend; with the single exception of a verbal error which is noticed in his 'Reply to H. I. B.' In respect to chemistry, the author may safely affirm that not a fact has been subsequently disclosed that reflects the smallest light upon physiology or pathology. The whole of that ground, wherever chemistry had obtruded itself upon the science of life and disease, is so amply explored in the Commentaries, that not a substantial fact, nor a vague conclusion, has been put forth by the school of Liebig, which is not there examined, anticipated, and answered, as something which had already an existence, or was likely to emerge from the speculative philosophy of the laboratory then in almost universal vogue. That this is not the author's opinion alone appears from numerous admissions that have fallen from the press."

The author here quotes our own opinion, as expressed in a previous number of this Journal; and we would add, in conclusion, that the history of our author's Commentaries must ever serve as a caution to medical editors, how they attack the writings of authors who boldly leave the beaten track pursued by their predecessors, in search of new truths.

ART. XV.—*Transactions of the New York State Medical Society, which met at Albany, on the 6th of February*, 1844, *pursuant to Statute.* Vol. VI., Part I., 8vo., pp. 150.

THESE transactions, we are proud to say, constitute an interesting collection of papers, comprising the following essays: 1. The Annual Address, by Professor White, on Insanity, which was noticed in our number for May; 2. Observations on Equivocal Generation, prepared as evidence in a Suit for Slander, by Thomas W. Blatchford, M. D.; 3. Medico-Legal Observations on two cases in which the crime of Murder was charged, by Augustus Willard, M. D., of Greene, Chenango County; 4. Medico-Legal Testimony on the Trial of Mrs. Turpening for the Murder of her Husband, with Observations on the same, by N. S. Davis, M. D.; and 5. On the Deaths from Poisoning, in the City and County of New York, during the years 1841, '42, and '43; obtained from the Records of the Coroner, by John B. Beck, M. D., Prof. of Materia Medica and Medical Jurisprudence, in the College of Physicians and Surgeons of New York.

The Appendix consists also of a variety of interesting papers: 1. An Abstract of the Proceedings of this Annual Session of the Medical Society of the State; 2. List of Officers; 3. The Powers of County Medical Societies, as to the admission of Members; 4. Report of a Committee on the subject of Legislation, in which the Laws relative to Quackery, in the different States of the Union, are adduced; 5. Legislative Documents, being various Reports, Speeches, and Petitions, made to the Legislature on subjects connected with the interests of the Medical Profession; and 6. Classification of Counties.

Passing over the President's address, noticed before, the next essay is by Dr. Blatchford on "*Equivocal* Generation." Dr. B. was subpœnaed as a witness, in 1836, in a case of slander, in which one woman was accused by another of having become pregnant by a dog; and the question upon which he prepared written testimony, was, "Is it possible for a woman to become pregnant by a dog, and to bring forth pups or any other issue as the result of such unnatural intercourse?"

First, as regards the use of the word *equivocal*, which here finds an application, in which we do not recollect having ever before seen it used. The term *equivocal*, strictly defined, means *spontaneous* generation, as, for instance, the supposed production of the lower forms of life by chemical agency. But it may, perhaps, be applicable to any mode of generation differing from the usual laws.

This is a very valuable paper; and our only regret is, that we have not the space to spare requisite for laying it before the reader more at large.

"We learn," says Dr. B., "from the account given by Moses of the creation, that each plant and each animal throughout the whole extent of organic nature, at the time of their creation, received a command to 'bring forth seed after his kind which was in himself;' and then follows the evidence that the command was obeyed, 'and it was so.' And it is a fact worthy of observation, that all the investigations of naturalists, from the most remote to the latest period, tend only to give additional proof that this LAW is still universally obeyed."

* * * * * * * * *

"It may however be said, that the fact of *hybridous productions*, or cross-breeds as they are sometimes improperly called, may be opposed to the existence of this general law, which I am endeavoring to trace. With respect to these, however, as far as it concerns the animal kingdom (and I believe it holds good also in the

vegetable kingdom), it is known that they cannot be produced except between individuals of the same species, and even in these few instances it seems to be the concurrent opinion of naturalists generally that they must first be domesticated, for in a state of nature these productions are not known. Besides their domestication, there must be an exact agreement in three essential particulars.

"1. Both species must possess organs of generation exactly alike.

"2. The time they go with young must be the same.

"3. They must agree in their manner of copulation.

"Hybrids among animals occur only in a very few classes. There is that of the horse and the ass kind, but here we find the female ass and the mare furnished with organs of generation precisely similar, their period of gestation is the same, being a little over eleven months, and so is their manner of copulating; thus there is a concurrence of these three important particulars, essential to pregnancy in cross-breeds. The same similarity occurs between the male organs of generation in the jack and the stud as occurs between those of the females of the same species. But here a circumstance should be mentioned which shows very strongly the antiphysical nature of such abnormal productions. The hybrids of these animals never possess the power of reproduction; although as far as the investigations of the anatomist can ascertain, they are furnished with all the necessary organs of generation, and the male mule is vastly more lecherous than either the jack or the stud. Aristotle, however, a celebrated ancient philosopher, contended that the male mule could impregnate the female ass, because the organs of generation seemed so perfect; but Dr. Goldsmith very shrewdly remarks, that there being no instance of its occurring since the death of Aristotle, he should think two thousand years quite sufficient to try the experiment and settle the question.

"It has been ascertained, says Cuvier, that the female zebra may successively produce young with the horse and the ass; and here too is an exact agreement in the three essential particulars."

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"Upon the *dog*, the *wolf*, and the *fox* (three animals resembling each other so closely, that Cuvier says a written generic and specific description of the one suits the rest, and if it were not for drawings and specimens, no just idea could be given of the differences between them)—upon these animals fruitless experiments have again and again been made to ascertain whether they would cohabit promiscuously with each other. The organs of generation are alike in all three, and the manner of copulation is the same likewise; but a difference exists between them in the period they go with young. The fox goes six weeks, the dog nine, and the wolf fourteen. This is doubtless the great barrier, which, together with the almost irreconcileable hatred subsisting among them toward each other, the wise Creator has set up to prevent their promiscuous union. If so, we may safely predict that every succeeding experiment will be alike unsuccessful. No naturalist labored more perseveringly in this field than the elegant and indefatigable Buffon. He procured pups of the wolf and the dog when they were under a fortnight old, he brought them up together in a large retired enclosure, suffered no individual to molest them, and none to visit them but their keeper; and although the wolf, which was the female, was regularly in heat at the season, no kind of sexual intercourse was ever observed between them; and although the experiment lasted three years, and every regulation was adopted calculated to favor the end proposed, the result was the same as in all preceding experiments, having the same end in view."

There is one point, however, which, notwithstanding Dr. B. has strongly fortified his opinion on every side, we are disposed to contest, namely, his denial of the fruitful cohabitation of the dog, the wolf, and the fox.

Our own experience among the Seminole Indians led us to believe that the dog and wolf procreated together, and this is the universal opinion both among the red and the white men on the frontier. We have

seen many dogs whose wolfish characteristics were so obvious as to excite the remark of the most superficial observer. Indeed, the question would often arise—is that a dog or a wolf? Moreover, we have a strong confirmation of this opinion in a recent communication received from W. J. King, M.D., of the Medical Staff, U. S. Army, on the *Vital Statistics of the Winnebagoes*, who has been stationed four years among that tribe. As we are in constant expectation of receiving additional data from Dr. K., we have thus far delayed the publication of his interesting paper; and, on the present occasion, we propose making use of such part of it only as pertains to the question under consideration. Thus—

"On the question of different species of animals, it having become a matter of some importance, on account of its bearing on another great question, I have instituted inquiries from time to time respecting the dog and wolf, which Dr. Godman, I believe, describes as two distinct species. The result here, is, that the *dog and wolf breed as readily together as when confined to their own race respectively;* and succession and *constant* succession follow their union. Nearly all the dogs owned by them are a mixture of the two; and it is the opinion of the old men among the Indians here, who are the best judges in the world on this subject, that the same is true of the dog and fox; thus proving, according to the best authorities on this subject, the identity of the three species."

Although we feel that we have been scarce able to do justice to Dr. B.'s paper in the short space allowed, yet we are obliged to pass on to the last paper of these Transactions, after giving the following rational conclusion arrived at by Dr. B.:

"These are some, at least, of the reasons which influence me in the opinion already expressed, that it is utterly impossible, under any circumstances whatsoever, for a woman to become pregnant by cohabiting with a dog, and bring forth any offspring as the result of such a connexion; and much more the regular offspring of the dog. The thing to my mind is an utter impossibility, unless the immutable laws of nature can be supposed to change."

The last paper just adverted to is by Prof. John B. Beck, relative to the "Deaths from Poisoning, in the City and County of New York, during the years 1841, 42, and 43, obtained from the Records of the Coroner."

"Believing," he says, "that the records of the coroner of so extensive a population as that embraced in the city and county of New York, might afford some valuable materials, worthy of publication, I recently applied to that officer to furnish me with a list of such inquests for poisoning as had come under his jurisdiction, accompanied with an account of the various circumstances of interest connected with each case. He promptly complied with my request, and furnished me with the following report, which I transmit for publication in the Transactions of the State Medical Society, not doubting that it will be deemed of sufficient interest to find a place. The gentleman who has held the office of coroner during the last three years, is Dr. C. B. Archer, and I believe that I express the common opinion of the profession, when I say that the duties of it have been performed by him with great fidelity and ability. Dr. Archer is, I believe, the first medical man who has held this situation in this county. His successor is also a medical man, and I should hope that the principle is now established (in this county at least), that the office belongs of right to the medical profession. It seems strange indeed, that it should ever have been considered otherwise. No one who is not a physician, let him be ever so intelligent in other respects, is competent, from the very nature of the case, to perform its duties.

Were the public justly to appreciate the functions of the coroner, and did they reflect how greatly the due administration of justice in criminal cases depends upon the preliminary investigations of this officer, one would suppose that none other than an intelligent physician would ever be tolerated. The public have, however, hitherto judged differently, and the examination of the most intricate questions, involving character and life, has been committed to the jurisdiction of men profoundly ignorant of everything relating to these questions. That this is a great public evil cannot be questioned, and the correction of it ought to be attempted as speedily as possible. No legislative act can of course touch the case, and it only remains for the united profession to exercise their influence in endeavoring to awaken the public mind to a just appreciation of the subject."

The table furnished to Dr. Beck, by the coroner, consisted of 83 deaths, from which the following arrangement of the leading facts was deduced by him:

"From the foregoing report of the coroner, it appears that of the preceding cases there were, of males 46, females 37.

Of those, poisoned by

Arsenic,	13	Ardent Spirits,	1
Opium,	8	Gin,	1
Laudanum,	39	Alcohol and Laudanum,	1
Paregoric,	1	Brandy and Laudanum,	1
Solution of Morphia,	3	Strychnia,	1
Corrosive Sublimate,	3	Prussic Acid,	1
Colchicum,	1	Phosphorus,	1
Sulphuric Acid,	2	Carbonate of Potassa,	1
Tinct. of Sanguinaria,	4		—
Tartar Emetic,	1		83

Of the 83, there were, suicides,	50
Taken by mistake, or through ignorance, &c.,	28
Unknown,	5

"It appears that the two poisons principally used were *arsenic* and *opium*, in some of its forms.

"In the cases of poisoning by *arsenic*, the smallest quantity was one drachm, and the largest two drachms. The shortest time intervening between the taking of the poison and the death, was 4 hours, the longest, 2 days.

"In the case of poisoning by *opium*, the smallest quantity was one drachm, the largest, one and a half ounce. The shortest time between the taking and death, 8 hours, longest, 20 hours. Average time of six cases, 14 hours.

"Of the cases of poisoning by *laudanum*, the smallest quantity was *one drop*, the largest, 16 ounces. The shortest period between taking and death, 2 hours, the longest, 48 hours. Average of 23 cases, 12 hours."

The interesting papers contained in the Appendix, cannot be further reviewed just now; but there are subjects comprised in it, which would warrant our resuming the thread of our narrative in a future number.

ART. XVI.—*The Principles and Practice of Modern Surgery.* By ROBERT DRUITT, Surgeon. From the third London Edition. Illustrated with 153 wood engravings. With Notes by JOSHUA B. FLINT, M.D., etc. Philadelphia: Lea and Blanchard. 1844. 8vo. pp. 560.

THIS is an admirable condensation of the principles and practice of modern surgery, of which the best evidence is to be found in the fact, that it has already passed through three editions in England, while the present is the second American edition. There is no work of a similar kind in the English language, in which the principles and the practice are condensed within so small a compass; although the present edition contains 50 pages more than its predecessors. The materials have evidently been gathered from the best sources; Hunter, Pott, the Bells, the Coopers, Abernethy, Travers, Lawrance, Guthrie, Liston, Mayo, Green, Copland, Graves and Watson.

The illustrations, which are numerous, are executed in the first style of the art; and the manner of getting up the work does great credit to the American publishers. We know no better work, as a text book for medical students, while attending lectures; and we take great pleasure in recommending it, not only to them, but to the practising physician, as one of the best compendiums which he can consult, to refresh his mind in the intervals of his laborious avocations, with the established principles and practice of the surgical art.

ART. XVII.—*On Sterility in the Male and Female, its Causes and Treatment.* By the CHEVALIER V. MONDAT, D. M. P., Professor of Anatomy and Diseases of Women and Children, etc. Translated from the fifth French edition; with fifty illustrations. New York: J. S. Redfield. Boston: Saxton, Pierce & Co. 1844. 12mo. pp. 248.

IN our country where population has fair play, the natural increase experiencing a duplication every twenty-five years, it may be thought that such a book would not have a very great demand, however it may be in the old European populations, where a duplication of the human race scarcely occurs in double the time, from natural increase. But this is a question that belongs more to political economy than to medicine; and it is now indubitably established, that wherever sustenance is abundant, there is most fecundity found. It has been no less truly than quaintly said, that "wherever there is a loaf added; there is a man born." But this book is not intended as a treatise on political economy, but it is addressed to the individual, in the hope, doubtless, that if it is not patronized by science, it will at least be sought out by vulgar curiosity.

The author first treats of the anatomy and physiology of the genital organs in both sexes; next, of the etiology and therapeutics of sterility; and lastly of the pharmacology applied to its cure.

The subject is undoubtedly treated scientifically; but there is so much in the volume that is objectionable, that we almost hesitate in its recommendation. The *congester*, used for the purpose of remedying sterility

in the male, when it arises from the loss of the power of exciting erections, is no doubt constructed on philosophical principles. This instrument is cylindrical in form, and is so arranged that an exhausting pump can be attached to it; but, as we do not wish to soil our page with a further description, we will leave the rest to the imagination of the reader.

The entire volume partakes of this character, which, were it strictly limited to the purposes of the scientific physician, might often be of service in removing causes of unhappiness in married life; but we fear that the majority of its readers will be influenced by less worthy motives.

As our author calculates that the causes of sterility in the female are much more numerous than in the male, in the proportion of thirty to one, in which opinion as a general fact he is no doubt correct, the subject gains additional importance as relates to the former sex.

Upon the whole, we think it a doubtful question, whether the cause of good or of evil would receive the greater promotion, by the general introduction of the *congester*, the *asterasic pommade*, and the *anti-anaphrodisiac liniment*.

ART. XVIII.—*The Art of Living.* By Dr. HENRY DUHRING. London: Longman, Brown, Green & Longmans. New York: Wiley & Putnam. 1843. 8vo., pp. 144.

THIS little volume teaches us "in what manner, and by what means, we may hope to render our existence as pleasant or happy as it possibly can be;" and, in the investigation of a subject so extensive as that of determining the best mode of attaining this object—the art of living, physically, mentally and morally, according to the laws of Hygiène—the author has condensed within a narrow compass some very important general principles. The conditions, so very important to our well-being and happiness, selected for discussion and illustration, are the following:

"FIRST PRINCIPLE.—The nature of human life is *twofold*, mental and physical; and human happiness is the result of the well-being and harmony of both.

"SECOND PRINCIPLE.—Providence has constituted us with a view to activity; and in accordance with this law of our nature, *labor*, either of the mind or body, is the only source or means of our enjoyment.

"THIRD PRINCIPLE.—As the human machine, like a common piece of mechanism, wears out most rapidly where there is the greatest friction and straining, relaxation of both our mind and body is an indispensable condition of man's happiness.

"FOURTH PRINCIPLE.—The study of nature, and the practice of horticulture, constitute the surest foundation of man's happiness.

"FIFTH PRINCIPLE.—There is nothing to be found in the wide world so pregnant with satisfaction, interest, and happiness, as the associations that cling to a happy home."

We commend this work to the attention of all readers; for, as our author observes, "to expect much happiness from an existence with the conditions, laws, and capabilities of which we hardly, if at all, are acquainted, would be expecting to reap where we have not sown."

ART. XIX.—*A Treatise on Hare-Lip and its Treatment.* By DR. S. P. HULLIHEN, Wheeling, Va. pp. 12.

THIS is an excellent brochure uponthesubject on which it treats, which first appeared in the American Jour. and Lib. of Dental Science. Dr. H. shows clearly, from extensive personal experience, that the age most favorable for the operation is the period prior to dentition.

As regards preparatory treatment, he makes the following judicious remarks:

"PREPARATORY treatment is applicable in all cases of hare-lip during infancy, where the deformity is accompanied with a cleft of the alveolar and palatine arches. It consists in restoring the alveolar arch to its proper form, before the operation for the cure of hare-lip is attempted.

"A cleft of the alveolar and palatine arches, like that of the lip, is a congenital separation of the parts, with but little if any loss of substance. Its connection, therefore, with hare-lip greatly increases the deformity of the whole countenance. The edges of the lip formed by the fissure are always carried apart as much farther than is usual in simple cases of hare-lip, as the cleft may be wide in the alveolar arch. The nostril over the cleft is likewise stretched out and depressed; a projection of the alveolar process frequently occurs, and the face is always very perceptibly widened, all resulting from the cleft in the jaw, and all increasing or diminishing in deformity, in proportion as the cleft may vary in width.

"To unite the edges of hare-lip, where this complication of the deformity exists, is always more or less difficult, and sometimes even impossible, and when accomplished will not restore the form of the nostril, correct the projections of the alveolar process, nor relieve the unseemly width of the face, except in a very limited degree. But closing the cleft in the alveolar arch corrects, at once, all these irregularities, and at the same time approximates the edges of the lip so closely that they may be most admirably united, without the least danger to the infant or to the success of the operation. It is upon these grounds that the utility and importance of preparatory treatment is urged.

"The closure of the cleft in the alveolar arch may be effected in a variety of ways; but the most simple, and at the same time the most effectual, may be accomplished solely by the use of the adhesive strap, properly applied upon the cheeks.

"The cartilaginous state of the bones in early infancy requires but little force to bring them into any desired position. But in removing the deformity of a cleft alveolar arch, a force of a twofold nature is often required, both to bring the edges together, and at the same time compress any projections of the alveolar process which may exist. In the proper application of the adhesive strap may be found this happy combination.

"The form of the strap which I have usually employed for this purpose is represented in the following cut. It should be left as large at each end as the size of the cheek will permit, and slitted at different places, so that it may adhere smoothly and firmly. The part required to pass over the lip should be somewhat less than half an inch in width, the edges of this part being doubled over and fastened together, in order to give it the necessary strength and stiffness.

"The strap may be applied in the following manner: after being properly warmed, one end should be quickly and well adhered to the cheek of one side, then, pressing both cheeks forward, and passing the strap over the upper lip, close to the nose, it should be adhered in like manner to the cheek of the other side. By thus confining the cheeks forward, a force is obtained and exerted upon the jaw, sufficiently great to close in a few weeks the widest cleft of the alveolar arch, and at the same time to correct any projections of its process. The strap should be kept perfectly tense. It is therefore necessary to tighten it every day or two, which may be done by cutting a small portion out of the narrow part, and then sewing it together, without disturbing its adhesions to either cheek. In this way, the same strap will last for several days, and is so easily tightened that its management may be safely entrusted to the parents of the child. As the wearing of the strap

never excoriates the parts, nor produces the least pain to the infant, however young, it is advisable to apply it as soon after birth as possible, as a cleft in the alveolar arch is more easily closed at this period than at any other; and as the strap is always of very great assistance to the infant in taking its food. In cases of simple hare-lip, without any cleft in the alveolar arch, the use of the strap will enable the child to nurse at the breast with but little if any difficulty.

"In the summer of 1839, I was requested to see an infant that had been born a day or two before, with hare-lip, the fissure extending into the nostril, but without any deformity of the jaw. I immediately applied the strap, with the view of enabling the child to nurse at the breast, and the experiment was perfectly successful. The child could at once seize and retain the nipple in its mouth, and soon learned to suck without any difficulty. Since then, I never have had an opportunity of repeating the experiment, except on an infant that had previously acquired the habit of receiving its food, for a long time, from the spoon. In this case the result was entirely unsuccessful.

"The time generally required to close a cleft of the alveolar arch, depends more upon the age of the infant than upon the size of the cleft. In the year 1838, M. H., of this city, requested me to see an infant of his, that had been born the night before, with a hare-lip, and the most extensive division of the alveolar and palatine arches, I ever witnessed. The cleft was nearly an inch in width, causing such deformity of the face as such a division can only produce. I at once applied the strap, and by close attention to the case succeeded in bringing the alveolar process together, in three weeks from the time that the strap was first applied.

"In another case where the child was nine months old, it required eight weeks to close a much smaller cleft. As this was the oldest child I was ever called upon to treat, where the use of the strap would have been of the least advantage, I have no means of determining the length of time it would require to close a cleft in a child of one or two years of age. It generally requires from four to six weeks to close the cleft in infants under five months old.

"As soon as the cleft edges of the alveolar arch are brought together so as to touch each other in the slightest manner, the operation for the cure of hare-lip may be properly performed. The union of the lip in all such cases has the effect of completing the closure of the cleft in the alveolar arch. The treatment of the cleft in the roof of the mouth and soft palate, must now be abandoned, until the patient becomes more advanced in life, and may, perhaps, form the subject of some future paper."

ART. XX.—*The Cyclopædia of Practical Medicine.* Parts VII., VIII., IX., X.

THIS work advances with commendable rapidity toward its completion. The whole is to be brought to a close in four volumes, and already have nearly two volumes been issued. Punctuality is commendable in all things, and especially so as regards a book published in parts; and this is a merit that the publishers and editor of the work before us possess in a high degree. Notwithstanding the serious objections that we have shown to exist in regard to certain parts of this work, we are free to admit its high merits in other respects. As regards the code of hygiology and physical education, as well as the immense body of medical theory and practice, with certain exceptions, contained in these volumes, the reader cannot but be enlightened by the perusal of their pages.

ART. XXI.—*A Dictionary of Science, Literature and Art: comprising the History, Description, and Scientific Principles of every branch of Human Knowledge; with the Derivation and Definition of all Terms in General Use.* Edited by W. T. BRANDE, F. R. S. L. and E. of Her Majesty's Mint, Professor of Chemistry in the Royal Institution of Great Britain, etc. Assisted by JOSEPH CAUVIN, Esq. Illustrated by numerous engravings on wood. New York: Harper & Brothers. 1843. 8vo. pp. 1352.

As this volume comprises within a nut-shell, comparatively, the circle of human knowledge, and as every subject is admirably treated, and as it embodies the latest information, being on a level with the most advanced state to which knowledge has attained, we know of no single work of the same character and dimensions that we could more cordially recommend to our readers. Among the many Encyclopædias and Special Dictionaries issued in recent years, there are very few, if indeed any, which are not either too voluminous or too special for ready reference or general use. The distinguishing feature of a useful Dictionary, ought to be, a facility of reference and precision of statement—qualities which surely are not possessed by our great modern Encyclopædias; for many of their articles are of such a length that a single one would of itself form a large volume, not to speak of the theoretical character and frequent obscurity by which many are characterized. Notwithstanding their value as substitutes for libraries, they are unfitted to be convenient manuals for the mere purpose of ready consultation. To special Dictionaries, the objection obtains that they are limited to a single department of science, literature, or art; but in each of which branches they may prove invaluable to those engaged in its special cultivation. Hence a desideratum—a work having the comprehensive character of a general Encyclopædia without its amplitude—has been long felt to exist in encyclopædical literature; and this want we feel assured has been supplied in this condensed and compendious Dictionary, which affords, in a convenient form, an abstract of the principles of every branch of human knowledge, and a definition and explanation of the various terms in science, literature, and art. It will be found useful to individuals of every rank and condition—to the student and superficial reader, to the man of business and the man of pleasure; in a word, to every one who ever takes a share in conversation, or ever indulges in the luxury of dipping into a newspaper.

ART. XXII.—*Astronomical and Meteorological Society of British Guiana.*

WE are indebted, we presume, to Daniel Blair, C.M., Colonial Surgeon, Georgetown, British Guiana, for some valuable Meteorological and Hospital Reports, for the last half of the year 1843.

The meteorological observations are made at the Colonial Hospital at Georgetown; and they are remarkable for their extended character, embracing the thermometer, barometer, hygrometer, pluviometer, evaporometer, anemometer, sympiesometer, electrometer, and observations upon the clouds.

The Hospital Reports include those of the General and Marine Hospitals, and that of the Lunatic Asylum.

Accompanying these Reports is a paper giving the rules and regulations, as well as instructions and bye-laws, of the "Astronomical and Meteorological Society of British Guiana," which is under the patronage of his Excellency, Governor Light.

ART. XXIII.—*A Conspectus of the Pharmacopœias of the London, Edinburgh, and Dublin Colleges of Physicians, and of the United States Pharmacopœia, being a Practical Compendium of Materia Medica and Pharmacy.* By ANTHONY TODD THOMPSON, M.D., F.R.S. *The Third American Edition, much enlarged and improved.* Edited by CHARLES A. LEE, M.D. (From the thirteenth English Edition). New York. H. G. Langley, 8 Astor House. 1844.

THIS excellent Manual of Materia Medica, Pharmacy, and Toxicology, has in one year, from the publication of 1500 copies, passed to a new and much improved edition. It now contains all the articles of the foreign Pharmacopœias, of the new U. S. Pharmacopœia, of Dunglison's "New Remedies," and of the late additions to Wood and Bache's Dispensatory, compressed into a small pocket manual of 320 pages. The toxicological part has been improved and enlarged, by the addition of about thirty pages, relating chiefly to the *tests* of the different poisons; so that in it will be found all that is essential to the physician in conducting experiments relating to this branch of medical jurisprudence. The editor has freely availed himself of the labors of Taylor, Guy, and other late writers on this important subject. We can cheerfully recommend this work to the medical student, as indispensable in pursuing the study of Materia Medica; to the practising physician, as useful in refreshing his memory, in relation to the choice of remedies, their effects, doses, incompatibles, &c.; and to the chemist and druggist, as containing all the modes of compounding and preparing medicines, which are found not only in the principal foreign standard authorities, but also in the new edition of our own national pharmacopœia.

ART. XXIV.—*On Superstitions connected with the History and Practice of Medicine and Surgery.* By THOMAS JOSEPH PETTIGREW, F.R.S., F.S.A., Doctor of Philosophy of the University of Göttingen, etc. Philadelphia: Ed. Barrington & Geo. D. Haswell. 1844. 12mo. pp. 213.

THIS little volume possesses much interest, not only to the professional student, but to the general reader. The tenor of the whole work goes to establish the following proposition:

"Man is a dupeable animal. Quacks in medicine, quacks in religion, and quacks in politics, know this, and act upon that knowledge. There is scarcely any one who may not, like a trout, be taken by tickling."

The general subjects treated of are the following: Alchymy, Astrology, Early Medicine and Surgery, Talismans, Amulets, Charms, Influence of the Mind on the Body, Royal Gift of Healing, Valentine Greatrakes' Cures, and Sympathetical Cures.

It is remarked by Bacon, that "witches and impostors have always held a competition with physicians;" and this fact is fully illustrated by our author in every age of the world. He remarks:

"The quadrature of the circle; the multiplication of the cube; the perpetual motion; the philosophical stone; magic; and judicial astrology, have been aptly denominated 'The six Follies of Science.' However vain has been the study, and however futile the results, the indulgence of the vanity and the pains of research have not been unattended with benefit to mankind, inasmuch as they have been the cause of many discoveries of much importance. The errors in medicine have usually originated in the speculative conceits of men of superior capacities. 'The blunders of the weak are short-lived, but a false theory, with a semblance of nature, struck in the mint of genius, often deceives the learned, and passes current through the world.'"

We heartily commend this little work to the curious of all classes of readers.

ART. XXV.—*A System of Human Anatomy, General and Special.* By ERASMUS WILSON, M.D., Lecturer on Anatomy, London. Second American Edition. Edited by PAUL B. GODDARD, A.M., M.D., Lecturer on Anatomy and Demonstrator in the University of Pennsylvania. With over 200 illustrations. Philadelphia: Lea & Blanchard. 1844. 8vo. pp. 607.

A Manual of Examinations upon Anatomy and Physiology, Surgery, Practice of Medicine, Chemistry, Materia Medica, Obstetrics, etc. Designed for the use of Students throughout the United States. By J. L. LUDLOW, M.D. Philadelphia: Ed. Barrington & Geo. D. Haswell. 1844. 12mo. pp. 615.

MR. WILSON, before the publication of this work, was very favorably known to the profession by his treatise on Practical and Surgical Anatomy; and as this is the second American edition, from the second London edition, since 1840, any special commendation of the high value of the present work, on our part, would be supererogatory. Besides, the work has been translated at Berlin, and overtures were repeatedly made to the London publisher for its reproduction in France. The work is, undoubtedly, a complete system of human anatomy, brought up to the present day. The illustrations are certainly very beautiful, the originals having been expressly designed and executed for this work by the celebrated Bagg of London; and, in the American edition, they have been copied in a masterly and spirited manner. As a text-book in the various colleges, we would commend it in the highest terms.

The Manual of Examinations is also a work which seems to fulfil its object. "Designed for the use of students of medicine throughout the United States," it very evidently answers the purpose of reviving "his recollection of subjects treated upon in more voluminous works."

ART. XXVI.—*A Dictionary of Practical Medicine, comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the disorders especially incidental to Climates, to the Sex, and to the different Epochs of Life; with numerous prescriptions for the Medicines recommended, &c.* By JAMES COPLAND, M.D., F.R.S. Edited, with Additions, by CHARLES A. LEE, M.D., Professor of General Pathology and Materia Medica in Geneva Medical College, &c. Part I. pp. 200. October. H. G. Langley, 8 Astor House.

OUR notice of the great work of Dr. Copland in our last number was so copious, that there is less need of going into detail on the present occasion. The first number, which is now printed, will speedily be in circulation, so that the profession will be able to judge for themselves as to the merits of the work.

On comparing it with the English copy, we find that the American editor has added upwards of forty pages of original matter, all of which is calculated to enhance the value of the work to the American practitioner. The additions are chiefly of a practical character, relating to the pathology and treatment of disease. The article on the effects of "Arts and Employments on Health" has been very judiciously extended to more than four times its original length, and the additions, we believe, will be found of great interest. The attention paid to the causes as well as the treatment of disease, in this work, which is one of its most important and characteristic features, we consider, gives it a value to the physician which cannot be claimed for any other publication of a similar kind. On the whole, no work on practical medicine has ever been issued in this country which has stronger claims on the patronage of the profession than Copland's Dictionary; and we cannot doubt that it will find a place in the library of every physician, more especially as the terms (50 cents a number) place it within the reach of all. The succeeding numbers, we are informed, will contain about 150 pages each.

We congratulate the profession on the rich and abundant supply of medical reading now furnished them by the enterprising publishers of our principal cities; and we augur from it the most auspicious results to the progress of medical science in our country. It, moreover, speaks well for the profession, and proves that, as a body, they are in the habit of reading; for if books were not in demand, they would not be printed, and we take it for granted that, if purchased, they are read. Here are two large cyclopedias of practical medicine in course of simultaneous publication, both of them possessing great merit, and both extensively patronized, besides the re-publication of all the best works issued on the other side of the Atlantic, to say nothing of the excellent "Sydenham Library," and numerous domestic as well as foreign medical journals. Does not all this prove, in a very satisfactory manner, that our physicians are, as a class, paying far more attention to the literature of their profession than formerly, and that the time is not distant, if it has not already arrived, when they will not suffer by comparison with those of Great Britain?

PART THIRD.

1.

Foreign Medical Intelligence.

ANATOMY AND PHYSIOLOGY.

1. *Description of a Double Bicephalous Monster.* By Dr. Benedini.—On being called to this woman, Dr. Benedini found one of the heads in the pelvis. After it had passed the external orifice, no efforts could advance it any farther, and a suspicion of the real state of the case having been excited after careful examination, it was believed best to separate the head first born, and then attempt to complete the delivery by bringing down the feet. This was effected after long and arduous efforts, and birth given to an immense monstrous fœtus at the full time. The mother, notwithstanding her suffering, made a good recovery.

The monster weighed twelve and a half Austrian pounds, and was eighteen Paris inches in length. Its greatest circumference was nineteen and one-fourth inches. There was a single umbilicus, exactly in the centre of the body. The nails were perfectly developed. The hair thick and long, covering the two heads, which were well formed, and each as large as that of a fœtus at the full time. The surface of the body was smooth, the members very well developed. In fact, there was every appearance of full maturity.

On examining the external configuration of the monster, it was evident that the two fœtuses, one of which we shall call the right, and the other the left, were united along the thorax and abdomen. The right costal half of the anterior part of the chest was formed by the right fœtus, and the left by the left. The thorax was large, and the ribs, longer and more arched than common, were inserted into a prominent sternum, on each side of which, in their usual situation, were observed the two mamillary prominences. Posteriorly, and somewhat to the left side, the conformation of the thorax became more complicated. Here the confused traces of another imperfectly developed and extremely irregular sternal region could be felt. Two small eminences, with an areola, were also to be observed here, and lower down, forming a triangle with them, another point indicating the situation of an umbilicus. The direction of the two vertebral columns could be distinctly felt and followed. Each fœtus had a distinct spine, apparently well formed, and distant from one another one-fourth of an inch at the upper part, whence they gradually approached one another, and united finally into one near the top of the sacrum.

The two heads were united to this double trunk by separate necks. They are precisely similar, with the faces directed forwards. The thyroid glands were enlarged in both. From the sides of the thorax hung the two arms in their natural situation. Posteriorly, and between the two heads, there was a third arm, articulated in a kind of deformed scapula,—the humerus being larger than natural, and the fore-arm consisting of a double set of bones as far as the wrist, to which were attached the two small hands. Precisely under this third arm, and where the axillary cavity should have been, existed the traces above described of a second imperfect thoracic cavity.

The abdomen anteriorly became, toward its lower part, simpler and less voluminous, in fact, more like that of a single fœtus; and the inferior extremities came off in their natural situation, one belonging to each fœtus, and both well developed. But posteriorly, and a little more to the left, there were superadded to the natural pelvis another os ilium and a deformed portion of pelvis, whence arose an osseo-carneous process two inches in circumference, and ob-

long, with three articulations; and terminating at its lower extremity in something like a human foot, with three phalanges or toes furnished with nails. This protuberance was in the same direction as the superadded upper extremity above described.

A single umbilical cord in the middle of the anterior part of the belly,—the genital organs single, and of the male sex,—the penis well developed, two testicles in the scrotum,—a single orifice in the raphe precisely at the root of the penis, from which meconium issued (which was the only sign of an anus),—were the principal additional points observed externally.

On opening the anterior thoracic cavity, it appeared unusually large, as being formed by the anterior portions of the chests of both fœtuses. It extended from one vertebral column to the other, between which was an ample sac, the pericardium; on opening this sac two small hearts were observed floating in about two ounces of aqueous fluid. The hearts were quite free and unconnected, but lying in close contact parallel to one another. At the sides of the two vertebral columns were the lungs, and around the heart the double arterial and venous system; and finally, the arterial canal from which the small pulmonary arteries proceeded to divide in the respective lobes of the lungs. Posteriorly, the cavity was closed by a fibrous septum adhering to the two vertebral columns,—above by the thymus gland, which occupied the lower part of the neck and the upper part of the chest above the pericardium; and below, by the diaphragm, which, attached to the two vertebral columns, the posterior fibrous septum, and the anterior part of the ribs, separated the thoracic and abdominal cavities.

The abdominal cavity was next examined. There was a single liver of large size, occupying the whole upper part of the abdomen, into the concave surface of which the umbilical vein was inserted. The gall-bladder, stomach, pancreas, spleen, and intestines, were all single, and in their natural situation. In the pubic region were two urinary bladders situated one anteriorly, and the other posteriorly—the first full of urine, the last empty, and both terminating in one neck of the bladder, and in one single urethra. The kidneys were four in number, two naturally situated in the cavity now described, and two very small ones in a superior posterior narrow cavity to be described immediately. As to the course of the ureters, it was impossible to trace them accurately, or say in which of the bladders they respectively terminated, owing to the depth at which they lay, and the quantity of fat with which they were surrounded.

On directing the attention to the posterior cavities, observed in the thorax and abdomen, the integuments being removed from the former, exhibited the sterno-costal ossification of small size, irregularly arched, and having its parts closely united. On removing the bones, two small shrivelled lungs were observed lying in a triangular space, of which the base was uppermost, one in the left side of the vertebral column of the right fœtus, and nourished by the blood of the right heart; the other, on the right side of the spine of the left fœtus, and nourished by the left heart. A very small diaphragm bounded this small cavity, which muscle was attached posteriorly to the septum, which divided the two thoracic cavities; and its fibres were continuous to those of the other diaphragm, or at least in such a state of contiguity as to offer no apparent separation, except what was marked by the septum above described. This would have been an important circumstance, as regards the performance of the function of respiration, had the monster lived. In the posterior abdomen, there was the small liver, without any insertion of the umbilical vein or other ligament into its concave surface. The other viscera of the abdomen were imperfectly developed. Two small bodies covered with fat, spoken of above, were the kidneys,—the intestines were small, and empty, except the ilium, in which meconium was found, and which terminated in the cœcum of the anterior cavity, so that the small intestines were double, and the large single. The large intestines terminated in the opening in the raphe, already described as affording the only trace of an anus.

All the other viscera and parts of the body were as normal in structure, and in the same physiological condition as those of any healthy and well developed fœtus at the full time.—*London and Ed. Journal Med. Science—from Gazetta Medica di Milano*, January, 1844.

MEDICAL PATHOLOGY AND PRACTICAL MEDICINE.

2. *On the Preparation and Therapeutic Employment of Valerianate of Zinc.* By MM. MURATORI AND CERULLI.—This new remedy is much employed in Italy in nervous diseases, and appears to be a remedy of sure efficacy in that class of cases, and a valuable addition to our means of treating them. Its formation is not difficult, if only we have previously obtained its two elements in a state of purity. Let a quantity of hydrated protoxide of zinc, sufficient to saturate the acid, be gradually added to a quantity of valerianic acid. Heat favors the combination. Then pour the solution of the salt into a porcelain vessel, adding a small quantity of protoxide of zinc to neutralize any uncombined acid. Concentrate the solution by evaporation, and a white crust of valerianate of zinc will form on the surface, which is to be removed as it forms, and after being dried, put into a close phial. M. Muratori has obtained the salt in another way, by the double decomposition of sulphate of zinc and valerianate of lime: we thus obtain a solution of valerianate of zinc, sulphate of lime being thrown down. The fluid is then concentrated. M. Cerulli treats of the practical applications of the medicine. In three cases of supra-orbital and infra-orbital neuralgia, a cure has been obtained by giving it doses of one and a half grains daily, divided into two pills, and taken at the moment of the accession of the paroxysm. In one case, the cure was complete in thirty days; in forty, in another; and in fifty, in the third.—*Ibid., from Gazette Médicale de Paris*, Jan., 1844.

3. *Veratria Ointment and Acetate of Veratria.*—Veratria made into an ointment with lard (3–10 parts of veratria to 400 parts lard) has been used for many years by Calvé and other physicians at Montpellier, with the best effects, in all forms of neuralgia. Sauvan, the apothecary, remarked that an ointment of veratria, prepared with rancid fat, was more potent, and attributed this to the soluble (*acetate*) *salt* of veratria, which was formed by the liberated acid. The veratria is dissolved by the acetic acid; at the same time, a small quantity of an oily substance, which is colored reddish-brown by nitric acid, is separated; and on evaporation a gummy, readily soluble salt, of a slightly bitter taste, is obtained, but more powerful than the pure veratria which has been treated with æther. It will consequently be better to make the ointment of *acetate of veratria and fresh lard* in small quantity, than to make the uncertain effect of the rancid fat.—*Ibid., from Pharm. Central. Blatt.*, Jan. 31, 1844; and *Chemist.*

[Turnbull's veratria ointment is composed of veratria, ℥ss; olive oil, ℥i; and prepared lard ℥i. We have sometimes found this unnecessarily strong, and therefore generally begin with prescribing from gr. xv to gr. xx, to the ℥i. In place of the olive oil and lard, cold cream may be substituted in private practice.]

4. *Large doses of Nitrate of Potash, and Sulphate of Quinine in Rheumatism.*—Dr. Bennett traces back the exhibition of large doses of nitrate of potash in the treatment of rheumatism, to the middle of the last century, when it was employed by Dr. Brocklesby, and other physicians, who gave as much as one or two ounces in the course of four-and-twenty hours. It has since been occasionally administered by several Italian and French physicians, and the practice was afterwards revived by M. Gendrin, who was followed by M. Martin Solon. The cases in which Dr. Bennett has found the nitrate of potash to be the most successful, are those of acute rheumatic fever; in chronic rheumatism, it appears to be of little avail. M. Gendrin generally begins with four drachms in the twenty-four hours with an adult female, and six drachms with an adult male, and rapidly increases the dose to eight, ten, or twelve drachms, seldom carrying it further. The nitre must be given dissolved in a large quantity of weak lemonade, or barley-water, properly sweetened, in the proportion of about four drachms of nitre to a pint and a half of gruel. This solution should be the only beverage, to ensure its being drank by the patient. There is great tolerance of it in the great majority of cases, when thus administered. Sometimes, however, the ingestion of the solution at

first occasions slight vomiting, but this Dr. Bennett has always observed soon to give way on merely continuing its use. M. Martin Solon states, that in these cases he has found that the addition of a little syrup of poppies effectually arrests the vomiting. During the first twenty-four or thirty-six hours, very little change is produced in the state of the patient; but generally speaking, about that time, sometimes a little later, the pulse diminishes in strength and in number, and that without any perceptible change in the patient's condition. M. Martin Solon says that the quantity of the urine is seldom, if ever increased, but Dr. Bennett has seen many cases in which the renal secretion has been decidedly increased. Abundant diaphoresis occasionally sets in on the second or third day, which, however, is not regarded by M. Solon as the effect of the remedy, but as a symptom of the disease. He believes that nitre acts merely as a sedative on the circulation. Dr. Bennett agrees in the belief in the sedative action of the nitre, but also considers its influence on the secretion of the kidneys and skin of service in the removal of the disease. As the general febrile symptoms subside, the local inflammation also diminishes, and if the ingestion of the salt is continued, there is scarcely ever any relapse. A cure is generally completed by the tenth or twelfth day, but the tongue almost always continues white and loaded, and the appetite bad, as long as the nitre is administered. M. Martin Solon has analysed the urine of patients to whom nitrate of potash has been largely administered, and he states that he has always found all the salt he has given in that secretion. Cases occasionally occur in which nitre does not produce any effect whatever, the disease continuing to progress, or, at least, not diminishing under its influence If such be the case after the medicine has been given for four or five days, it must be changed. Heart disease has been very rare in cases of rheumatism treated by the exhibition of large doses of nitre. Dr. Bennett saw the sulphate of quinine exhibited in the practice of M. Emery, at the St. Louis hospital, in large doses, such as from fifteen to forty-five grains in the twenty-four hours, even until, in a large proportion of the cases, toxic effects were produced; and yet no benefit was derived, the disease continued to make progress, as if nothing had been done. The same conclusion has also been arrived at by M. Monneret, who also reports unfavorably of the treatment of rheumatism by nitrate of potash.—*Medical Times.*

5. *Veratria in Facial Neuralgia.*—Dr. Le Calvé cites two severe cases of this painful disorder, which were entirely cured by frictions with veratria ointment. The first is that of a person employed as inspector of a telegraph, who, having exposed himself for half an hour to a very cold air, was a few minutes after seized with violent pains. They proceeded from the frontal branch of the ophthalmic nerve and radiated over the temple; the eye was injected, and there was considerable spasm of the eyelid, and dread of light. Dr. Le Calvé immediately prescribed the veratria ointment. After the first friction, at the end of a few seconds, the pains ceased with exceeding rapidity. The patient thought himself cured, and was soon asleep. At two in the afternon a fresh attack came on, which yielded to a friction continued for four minutes. In the evening a preventive friction was made, and the patient passed an excellent night. The next day, about six in the morning, the pains re-appeared; but this time they proceeded from the superior maxillary nerve, at the point where it issues from the infra-orbital foramen, and thence they spread rapidly to the posterior and superior dental branches. A friction which lasted five minutes caused this attack to disappear. It was followed by a few others which always yielded to the same means. From this period, for more than a year, the neuralgia has not re-appeared. The other case was that of a merchant's clerk, about forty-one years of age, of sanguine temperament, who was seized six days after a journey, during which he had exposed himself all night at the coach window, with a violent pain proceeding from the frontal branch of the ophthalmic, and radiating over the temple and the whole of the right side of the back part of the head. Dr. Le Calvé found his patient in violent agitation, and uttering piercing shrieks. The right conjunctiva was much injected, the eye was suffused with burning tears, and the dread of light was extreme. There was also a lancinating pain at

the bottom of the orbit. The veratria ointment was immediately applied, and the pain yielded to a friction which lasted sixty-two seconds. At two in the morning a fresh paroxysm occurred, which yielded like the former to a friction of two minutes. Fifteen months have elapsed without any return of the neuralgia. In the preparation of the ointment, Dr. Le Calvé gives the preference to rancid lard, as it favors the formation, by its acidity, of acetate of veratria.—*Ib.*

6. *Hydrophobia treated by the Poison of the Viper.*—Prince Louis Bonaparte has separated the active principle of the poison of the viper, and has named it *echnidnine*, and he proposes it as a remedy for hydrophobia. At the hospital of Santa Maria Nuova, at Florence, six vipers were made to bite a patient laboring under hydrophobia. Death took place, however, with all the symptoms of hydrophobia, without any of those which follow the bite of a viper having occurred. Prince Louis, however, thinks that the principle of the poison, freed from all other substances, might prove more efficacious if injected into the veins of a person labouring under hydrophobia.—*Ibid.*

7. *Large doses of Quinine in Epilepsy.*—M. Taroni mentions in the *Gazetta Medica di Milano* the case of a young woman who was the subject of epilepsy from fright. Failing other measures and the disease manifesting a marked periodicity, M. Taroni exhibited quinine in large doses, beginning with twenty grains daily, and gradually raising the quantity to forty grains, which were given daily for six days, after which the dose was gradually diminished. During all this while the cure was progressive, and was finally accomplished.—*Ibid.*

8. *Prophylactic Remedy against Ptyalism.*—Dr. Schoepf, Professor of the University of Pesth, recommends the following tooth-powder, while administering mercury, in order to prevent salivation taking place. R. Pulv. alumin. exsiccat, ℥ij., pulv. cinchon. ℥j. m. To be applied by means of a soft brush morning and evening.—*Ibid.*

9. *Creosote, a good Application to Burns.*—Creosote is one of the most valuable of those remedies which the ancient writers designated as *incarnatives; i. e.* promoting cicatrization. M. *Mascharpa* has drawn the attention of his countrymen (Gazetta Medica di Milano) to its excellent effects in this respect, as an application to many ulcers. He has used it also in several cases of burns with the most satisfactory results: it soothes the pain of the injury at the time, and accelerates the subsequent progress of the cure. The best mode of using it is in the form of lotion,—made by adding 20 or 30 drops of it to two or three ounces of water, and applied with pledgets of linen to the injured surface.

(The London Pharmacopœia, in its last edition, contains an "Unguentum Creosoti," prepared with half a drachm of the oil to an ounce of lard; it is applicable for the same purpose as the solution of the oil in water.)—*Med. Chir. Review, for July*, 1844.

10. *Ammonia in Delirium Tremens.*—In one of the recent German Journals, we find a paper by a Dr. *Scharn* on the subject of this troublesome and distressing malady. The learned doctor having experienced no little disappointment from the use of the remedies in general use, and conceiving that, as the disease is nothing else but intoxication arrived at the period of its *apogee*, it should be treated by the very same means which are known to be most serviceable against the latter, had recourse to the employment of Ammonia, in the form of the pyro-oleaginous solution, or of the Succinate of the alkali. By means of this very simple and innocuous remedy he has succeeded, he assures us, in curing a great number of very severe cases of the disease.

It deserves notice that M. *Brachet*, also of Lyons—a gentleman whose opinions are justly entitled to consideration—has recently recommended the same remedy, Ammonia, in the treatment of delirium tremens.

(Ammonia by itself will rarely suffice to subdue the excitement and allay the restlessness of this neurosis: opium must almost always be associated with it.

We have often used, with good effect, the Ammoniated Tincture of Valerian and the Liquor Opii Sedativus—not forgetting the application, at the same time, of warmth to the feet, and of cooling spirituous lotions to the head. When symptoms of febrile or inflammatory irritation are present, it may be necessary to resort to leeching, and the administration of effervescing saline draughts with Antimonial Wine.)—*Ibid.*

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PATHOLOGICAL, THERAPEUTICAL, AND OPERATIVE SURGERY.

11. *Trephining in Injuries of the Head.*—Dr. Laurie and Dr. King, in a paper published in the *London and Edinburgh Medical Journal*, give the following rules for the operation of trephining in injuries of the head, when there are present profound coma, paralysis, and other symptoms of severe cerebral lesion, as the most rational, and best supported by experience. 1st. When the shock has passed off, and the patient is in a condition to bear the operation, we should operate where the state of the bone is such as would warrant interference in mild and less urgent cases. In other words, symptoms of severe compression should not prevent us from operating in those cases in which the state of the bone, irrespective of cerebral symptoms, seems to warrant the operation, although our hope of benefit from the operation is very slight. In such cases, we ought not to expect that removal of depressed or comminuted bone will take with it the symptoms of compression ; all we can look for is, that it will render the injury less complicated by removing an obvious source of irritation. 2dly. Where we have good grounds to suspect extravasation, we operate to give vent to the offending fluids ; here, also, our hope of benefit from the trephine is very slight. 3dly. In all other cases of this class of injuries, they think it good surgery not to interfere, and it appears to them that nearly the same rules apply to those cases in which symptoms of concussion are united with compound fracture. If the state of the bone *per se* demand interference, we ought to operate, to take away a source of irritation, not in the hope of removing the symptoms of concussion. In all other cases complicated with concussion, we ought not to interfere. Dr. Laurie and Dr. King express their opinion strongly relatively to the use of the trephine ; they say that it would not have been greatly to the disadvantage of the patients admitted into the Glasgow Infirmary if a trephine had never found its way within its walls. Like all other operations, however, it is too often tried as a forlorn hope in hopeless cases ; and, in the more favorable, is delayed until the proper period for its performance has passed. They believe that there are not many cases in which it can do good ; but, if these were but properly selected, and promptly and effectually operated on, statistics would show fewer operations, and not only relatively, but absolutely, more recoveries.—*Medical Times.*

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12. *Remove the whole of an Organ affected with Malignant Diseases.*—If there be a scirrhous tumor imbedded in the gland of the breast, and you remove the tumor, together with the part of the breast in which it is situated, leaving the remainder of the breast, according to my experience, the disease is certain to return ; and this corresponds to a rule which I think applies to all cases of malignant disease—that is, that you have no security against the return of the disease unless you remove the whole of the organ in which it is seated. For instance, if there be fungus hæmatoides of the bone of the leg, the patient may have some chance if you amputate the thigh above the knee, but none if you cut through the tibia below the knee. If there be malignant disease of the femur, you have very little chance at all, unless you think it expedient to take out the thigh-bone at the hip-joint. I say, therefore, in cases of scirrhous tumor of the breast, if you perform the operation at all, where the tumor is imbedded in the breast, you must remove the whole of the organ. You may imagine that this is a thing very easy to be done, but you will not find it so in reality ; for, in amputating the breast, in a thin person, you will be very apt, if you are not extremely careful, to leave a small slice of the gland of the breast adhering to the skin, and I have no doubt that this small portion may, in some

cases, form the nidus of future diseases. The color of the gland of the breast varies little from that of the surrounding adeps, the hemorrhage causes confusion, and you must be careful, in the dissection, to keep the knife near the skin, not near the breast. But, in addition to this, in every case when you have taken out the tumor, you should examine the surface, and see whether every part you have removed is covered by healthy adeps. If it be not, look on the middle of the flap of the skin, and see whether any small portion of the breast has been allowed to remain there.—*Lancet*, Feb. 3, 1844.

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13. *Case of Fatal Hemorrhage, from Perforation of the Arch of the Aorta, by False Teeth impacted in the Œsophagus.* By JAMES DUNCAN, M. D., Surgeon to the Royal Infirmary of Edinburgh.—A young man, aged twenty-two, a dentist's workman, having lost his two front teeth by an accident, supplied the deficiency by a couple of artificial teeth, secured on a frame in the usual way. He sometimes slept with these teeth in his mouth. On the 28th of February last they were missing in the morning, and the young man complaining of pain and difficulty of swallowing, he applied to Mr. Syme, who with a probang detected a foreign body in the œsophagus, much beyond the reach of the ordinary forceps used for extracting foreign bodies from the gullet. The patient was removed to the infirmary, and attempts were made to entangle the foreign body in a skein of thread connected with the probang, but in vain. By and by the pain subsided, and the patient left the hospital in the evening of the ninth day, March 8th. Next morning, Dr. Duncan was hastily summoned to see him at home. In rising from bed and crossing the room, he had become suddenly faint and giddy, and had vomited a mouthful of blood. He was immediately removed to bed, and complained of a feeling of great weakness, and of some slight difficulty of breathing. His face was pale, and the skin rather cold, but the pulse was of moderately good strength. From his description of what had taken place, I was led to believe that the foreign body had been dislodged from its situation, and that it was possibly within reach of the forceps, with which I had provided myself. I accordingly requested him to sit up by the side of his bed, to enable me to make the necessary examination. This he did with ease, and without much assistance, expressing great anxiety to have something done to relieve him. The act of d pressing the tongue, to enable me to introduce the forceps, produced vomiting, and a mouthful of dark fœtid blood was discharged. This was immediately followed by another, but much larger quantity of fluid of the same description, perhaps about eight or ten ounces, and the false teeth were heard to rattle against the vessel into which it was received. The patient was immediately aware of this, and his friends were overjoyed at what had taken place. Another mouthful of the same fluid was then ejected: an interval of a few seconds elapsed, and then a mouthful of bright arterial blood was discharged; a second and a third followed, the lips became livid, and the pulse at the wrist ceased, the patient gave one or two convulsive sobs, and expired.

An inspection of the body was readily obtained from the friends. The pharynx, the œsophagus, and stomach, along with the carotids, subclavians, and arch of the aorta, were removed entire, a ligature having been previously thrown around the duodenum to prevent the escape of the blood which had accumulated in the stomach, and so enable us to form an estimate of the quantity which had been lost. The œsophagus, stomach, and duodenum, were found distended with pretty bright arterial blood. The quantity could not be measured; but, in the opinion of those present at the examination, there could not have been less than eight or ten pounds. The pharynx and œsophagus were laid open by an incision posteriorly, carried as low as the cardiac orifice of the stomach. About 4½ inches from the rima glottidis there was an ulcerated perforation of the interior part of the œsophagus, of about ¼ths of an inch in length, and three lines in breadth, passing obliquely upward from the right to the left side. The edges of the perforation were rounded, and there was considerable surrounding injection of the mucous membrane. By this opening the probe could be readily passed into the aorta; but the latter vessel was not laid open at the time, it being thought better to immerse it for a day or two in spirits before

doing so. On laying open the aorta subsequently, a perforation of about the size of a large crow-quill was found about half an inch below the origin of the left subclavian artery. The opening was irregular in form, the edges everted, and at the lower part there was a pretty firm adherent coagulum. There was little or no vascular injection around this opening. The artery was otherwise perfectly healthy.—*Dub. Med. Press, from Northern Journal.*

14. *Statistics of Fractures.*—In our January Number, Mr. Lyon gave an interesting statistical account of the cases of fractures which had been treated in the Glasgow Royal Infirmary by him; the following table shows the number of fractures admitted into the London Hospital during the year 1843:—

	In-Patients.	Out-Patients.	Total.
Skull,	14	—	14
Face,	14	4	18
Spine,	4	—	4
Ribs,	115	42	157
Pelvis,	5	—	5
Thigh,	56	4	60
Patella,	14	1	15
Leg,	150	6	156
Foot,	24	2	26
Shoulder-bone,	5	10	15
Collar-bone,	12	104	116
Arm,	32	52	84
Fore-arm,	18	138	156
Hand,	18	55	72
Total,	481	418	899

24 of the 481 in-patients died, but we are not informed to what class the fatal cases belonged.—*London and Edin. Month. Jour.*—Abridged from *the London Med. Gazette* for March 1, 1844.

OBSTETRICS AND DISEASES OF FEMALES.

15. *Lactation, its Influence on Conception.*—Dr. Loudon, in a work on the law of population and subsistence, propounds the theory that the laws of nature require lactation to be prolonged for three years, and expresses an opinion that the antagonism between the uterus and mammæ is so great as usually to prevent conception in women who have infants at the breast. This opinion, however, does not accord with the facts stated by Mr. Roberton, and is even more decidedly at variance with the results arived at by Dr. Laycock. Dr. Laycock states that 135 married women yielded 209 pregnancies during 766 lactations, or 1 pregnancy in 3·66 lactations, or 27 per cent. Those 209 pregnancies occurred in 76 females, that is to say 56 per cent. became pregnant while suckling; but in 30 of these pregnancy under these circumstances occurred only once. If, therefore, they be deducted, there remain 46, or 33·9 per cent., or nearly 1 in 3 who became pregnant on more than one occasion while suckling; and 19 of these, or 1 in 7, had always (after their first pregnancy) conceived while suckling.—*From the British and Foreign Medical Review, April*, 1844.

16. *Occlusion and Rigidity of the Cervix Uteri.*—Dr. Ashwell has made some valuable practical remarks on *Occlusion and Rigidity of the Cervix Uteri* as an impediment to labor, and has related cases illustrative of his views. He dissents from the opinion of those who imagine that in many instances of the alleged closure of the os uteri, the practitioner was deceived by an unusual degree of obliquity of the uterus placing the orifice out of reach; and states that he has never met with any case in which labor was seriously protracted by obliquity of the womb. He advocates the early employment of mechanical means to

re-open the occluded os, and thinks that, unless its situation be clearly indicated by some marked depression and thinning in the uterine wall, incision is far preferable to any attempt at forcing a passage by the use of a catheter, the finger, &c. He regards the hazard of extensive laceration of the womb following such incisions as an imaginary danger; and therefore in cases where, though the os uteri is not occluded, both it and the cervix are rigid and undilatable, and continue so after the employment of venesection, and the administration of antimony and opium, he conceives incision to be far preferable to any attempt at artificial dilatation.—*Ibid.*

17. *Cæsarean Section after Death.*—On the 23d of August, 1843, Dr. Loweg, of Verl, was called to see a female patient who was pregnant, and who had been ill for a long time; she expired shortly after the doctor's arrival, and being informed of her pregnancy he proceeded at once to perform the Cæsarean Section, making his incision along the linea alba, and pursuing in other respects the usual course. As soon as the child and placenta were removed, the operator endeavored in vain to induce the contraction of the womb by irritating its internal surface. A small quantity of warm venous blood was discharged. When removed the child appeared to be quite dead; it was of full term, perfectly fresh, and had evidently lived up to the period of its mother's death; it was placed in a bath with the placenta still attached: but this latter was soon after removed, and recourse had to insufflations of air. At the expiration of a few minutes the pulsations of the heart became perceptible, and shortly after respiration was fully established.

The child continued to live; it was strong and healthy three months after its removal from the womb, when it was brought to Dr. Loweg for his advice for some slight eruption under the arms and behind the articulations. He subsequently died, but it is not known of what disease.—*L'Abeille Medicale.*

18. *A Remarkable Abortion.* By Dr. Bunde, of Fredrikssund.—The infant, a boy, was born with all the small intestines spread over his belly. It appeared that the thin membrane which had encompassed them like a sac (a prolongation of the extended peritoneum), had been torn during delivery. The umbilical opening, whence the intestine issued, was the size of a shilling, and as several of the bowels were adhering to it, they could not be replaced. The child lived twenty-eight hours. On dissection it was discovered that there was no room for the bowels in the abdomen, because all the other organs were preternaturally large. The portion of the navel-string which had passed through the sac was very thin, but near the placenta it was an inch thick.—*Medical Gazette, from Oppenheim's Zeitschrift*, Feb. 1844, p. 254.

TOXICOLOGY AND MEDICAL JURISPRUDENCE.

19. *Antidotes of Corrosive Sublimate, Copper, Lead, and Arsenic.*—By MM. Bouchardat and Sandras.—By means of numerous experiments, first made in the laboratory and then repeated on dogs, MM. Bouchardat and Sandras have arrived at many interesting results relative to the antidotes of corrosive sublimate, copper, lead, and arsenic. All these are detailed at length in their long papers on the subject. Their conclusions were, that the following substances may be regarded as antidotes, and employed as such in medicine:—

As antidotes for corrosive sublimate.—A mixture of zinc and iron filings; or powder of iron reduced by hydrogen; or the moist persulphuret of the hydrated peroxide of iron.

As antidotes for copper.—A mixture of zinc and iron filings; iron reduced by hydrogen; porphyrized iron; zinc filings; or the persulphuret of the hydrated peroxide of iron.

As an antidote for lead.—The moist persulphuret of the hydrated peroxide of iron.

As antidotes for arsenic.—The moist hydrated peroxide of iron; the dry hy-

drated peroxide of iron; and the moist persulphuret of the hydrated peroxide of iron.

These experienced chemists add the following reflections:—This last preparation, the persulphuret of the hydrated peroxide of iron, possesses this superior advantage over all the rest, that it changes the nature of all the four poisons above noticed, and is especially applicable in those cases where we have not had time to find which of the poisons has been taken. As to the manner of administering these antidotes, and the doses which it is necessary to administer, the simplest means appear the best. The powders of zinc and iron may be suspended in any electuary, or they may be swallowed in wafer paper. The magma of the hydrated preparations of iron may be swallowed in the form of jelly, in which they are procured from the druggists. Several draughts of lukewarm water ought to follow the antidote, and the fauces be tickled with a feather, to excite vomiting and the expulsion of the poison. The efforts at vomiting scatter more effectually over the stomach the antidote which is administered. As to dose, the experiments proved that 100 grains of the powder of iron or of zinc sufficed to prevent any bad effects from 15 grains of the acetate of copper. Fifteen drachms of the moist magma of the persulphuret were required to produce the same effect with the same dose (15 grains) of the acetate of copper. To act as an antidote to 4½ grains of arsenious acid, 15 drachms of the moist magma of the persulphuret, or 30 drachms of the moist hydrated peroxide of iron, or 20 drachms of the dry hydrated peroxide of iron, were required. With regard to the time when these antidotes can be administered with advantage, in so far as the acetate of copper is concerned, the lapse of 40 minutes from the time of swallowing the poison ought not be regarded as a sufficient reason for not administering the antidote; but arsenic is more quickly absorbed. Nevertheless, the antidote should always be administered, because, though it will not neutralize what is absorbed, it will prevent its further absorption by decomposing what remains in the stomach.—*Braithwaite's Retrospect, from Edinburgh Med. and Surg. Jour. April*, 1844, *p.* 497.

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20. *The Queen* v. *Trilloe.—Infanticide.*—There was strong evidence to prove that the child had been born alive, and that the prisoner had strangled it by fastening a handkerchief or some such thing round its throat, but it was clearly proved by Mr. Wood, the surgeon, who examined the body of the child, that it must have been strangled before it had been separated from the mother by the severance of the umbilical cord, and it was further stated by Mr. Wood, that a child has, after breathing fully, an independent circulation of its own, even while still attached to the mother by the umbilical cord, and that, in his judgment, the child had breathed fully after it had been wholly produced, and had, therefore, an independent circulation of its own, before and at the time it was strangled, and was then in a state to carry on a separate existence.

Judge Erskine, in summing up, said, "If you are satisfied that this child had been wholly produced from the body of the prisoner alive, and that the prisoner wilfully, and of her malice and aforethought, strangled the child after it had been so produced, and while it was alive, and while it had, according to the evidence of the surgeon, an independent circulation of its own, I am of opinion that the charge in the second and third counts of the indictment is made out against the prisoner, although the child, at the time it was so strangled, still remained attached to the mother by the navel string." Verdict—Guilty. The case was reserved by the judge for the opinion of the fifteen judges, who held the conviction right.—*Amer. Jour. of Med. Sci. from I. Carrington & Marsham's Nisi Prius Reports*, p. 650. T. R. B.

MISCELLANEA.

21. *Ergotism, or Serious Accidents occasioned by the Ingestion of Bread containing Flower of Ergot.*—The following instance of the poisoning of a whole family by ergot, is recorded by Dr. Bonjean, in a late number of the *Giornale delle scienze mediche*. In the commune of Beaufort, in Savoy, a whole family, consisting of the father, mother, and seven children, was suddenly taken ill.

They had eaten in the space of three days, eighteen pounds of bread, composed of four parts of oat, and one part of rye meal. The mother, a woman 45 years of age, was the first attacked. On the 18th November, 1843, she felt uncomfortable, having had one or two chills; on the day following, she was sleepy, felt stupid, and was troubled with general oppression; on the 20th, her feet and hands were stiff, cold, and spasmodically contracted—wholly inflexible, and there was an entire loss of sensation. Subsequently, the disease pursued its regular course, with occasional remissions. The father and the children, who were attacked shortly after the mother, were, during twelve hours, a prey to the most cruel agonies, and repeated and violent convulsions.

Notwithstanding their dreadful condition, no physician was called in, and they took neither medicine nor anything else, except a little warm water, and vinegar and water. In the course of three or four days, they all recovered. The following facts, which were subsequently ascertained, are possessed of great interest. The flour or meal with which the bread had been made contained eighty-six parts of rye and oatmeal, and sixteen parts of spurred rye. With 250 pounds of this mixture, 218 pounds of bread had been made. Thus the 18 pounds of bread, which were consumed by the family in three days, contained two pounds and a half of ergot, which shows that, during that period, each of the nine individuals had taken about 4½ ounces of spurred rye. Dr. Bonjean concludes, that the making and baking of the bread had so altered or weakened the poisonous qualities of the ergot, as to have rendered it incapable of destroying life, even in the enormous quantity in which it had been taken; for, from the result of forty experiments which he had made on animals, he feels himself justified in asserting, that had not such been the case, the quantity taken was so large as to have destroyed with certainty, every member of the family. The father of this family was more slightly affected than any of its other members; and the circumstance was attributed to his having partaken of the crust of the bread only; although the quantity consumed by him was greater than that eaten by the mother or either of the children.

22. *Fresh Vaccine Pustules discovered on the Cow.* Academy of Sciences, Paris, May 27th. Fresh Vaccine Lymph.—M. Magendie announced to the Academy that he had met with the cow-pox in a cow which belonged to him. The woman who milked it complained of having contracted the disease on the hands. He (M. Magendie) inspected the teats of the animal, and there recognized a number of elevations, and some crusts, which appeared to him to resemble the true cow-pox. In order to be certain about it, he requested Dr. Fiard, who was specially engaged in vaccinating, to assure him if it was really what he suspected it to be; and in case it was, to obtain some of the fluid, and transmit it to the hospital, where he vaccinated children every week. Dr. Fiard accordingly vaccinated many infants with it, and genuine vaccine pustules were developed, the fluid of which has again been successfully inoculated, and is now in full activity in the third *Arrondissement*, where any one is at liberty to obtain it.

M. Magendie also placed his cow, which still presented many pustules like the preceding ones, at the disposal of the Academy. Any physicians who regard the freshness of the vaccine lymph as indispensable to its preservative power, might now satisfy themselves and procure without difficulty a fluid, the origin of which could not be doubted by any one.

M. Fiard then read the result of the vaccinations which he had performed with this virus.

On the invitation of M. Magendie, he went on the 1st of May to Cernay. The teats of the cow then presented cicatrices of past irruptions, and some crusts covering the old pustules. An elevation of the vaccine character, of about the size of the end of the finger, alone existed on the back part of the udder, which he opened, and received therefrom a sanguinolent fluid in three tubes. He also procured the matter found under the crusts.

The following day (May 2d), being one of those for public vaccination, he met five of his colleagues, who inoculated the right arms of seven children with the ordinary vaccine lymph, whilst he inoculated the left arms of the same

children with the matter which he had taken from the cow, making five punctures upon each.

On the 8th of May, the sixth day after the vaccinations, the children were examined. All the inoculations with the ordinary lymph had been successful. On the left arms of the six first, nothing was to be met with; on the seventh was a pustule having the perfect vaccine character, and resembling those on the right arm.

On the 11th of May, two other children and a woman were vaccinated with the fluid taken from this latter pustule, and on the 13th the success of these operations was proved. Many other children were inoculated with the same success, and now the fresh vaccine lymph is, in the third *Arrondissement* of this city, exclusively employed.—*Prov. Med. and Surg. Jour., July* 31, 1844.

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23. *Medical Honors.*—The promising young Vivisector and Physiologist, Dr. Longet, author of a valuable treatise on the nervous system, and Monsieur Pelletan, the well-known Chemist, have received the decoration of the legion of honor from the King of the French.

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24. *Singular Result of Insanity.*—In the Gazette des Tribunaux for August, 1843, is a notice of the case of a widow who became deranged in consequence of the death of her husband and attempted to kill herself. After this she often imagined she saw him in the street with other men. Becoming apparently better, she re-married. On fully recovering her mental powers, she disclaimed the connection, declaring that she supposed at the time, she was marrying her former husband.—*Amer. Jour. of Insanity, for July*, 1844.

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25. *Number of patients now in the Lunatic Asylums in the United States,* 2,561
Number of admissions the last year, ... 1,926
Recoveries during the year, ... 845
Deaths, including 98 said to have died at Blackwell's Island, . 294
Ibid.

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26. *Statistics of Phthisis.*—Dr. Boyd gives the results of the examination of two hundred and six cases of pulmonary phthisis made within the last three years. Of these, 132 were males, and 74 females; the respective ages were,—under 11 years, 18 males, 9 females—from 17 to 60, 93 males, 50 females—60 and upwards, 21 males, 15 females; the males thus exceeding the females in the proportion of 17 to 10. No case of phthisis occurred between the ages of 11 and 17 years. The period of life most obnoxious to the disease has been from 30 to 50 years, and the period most exempt under 20 years, in both sexes. The average duration of life in males, was 39.1-12th years; in females, 39.7-12th years. The duration of illness was, on the average—among 56 male adults, 11.1-2 months; and among 20 female adults, 10 months, previous to admission from the first accession of cough. The duration of the disease from its commencement to its termination was about twelve months in both sexes. Of 49 male patients, the majority followed out-door employment; and of 16 female adults, the majority had in-door occupation. The very young and very old were inmates of the workhouse. The mortality has been greatest among males in May, among females in October; least among males in October, and among females in July; in both sexes least in the summer quarter. Tubercular cavities were found in the upper lobes in both lungs in one-half, in the left lung only in one-fifth, and in the right only in one-sixth; and tubercles without cavities in one-eighth of the cases. Where cavities and tubercles existed in both lungs, the left was usually the more diseased. The complications of phthisis were an increased quantity of fluid in the ventricles of the brain, congestion, or an exsanguineous state or softening of these organs, opacity of the arachnoid, apoplectic clot, tumors connected with the membranes, pleuritic adhesions, chronic pneumonia, acute pneumonia or pleuritis, gangrene of the lung, pneumo-thorax, scrophulous glands, patent foramen ovale, aneurism of the aorta, ulceration or extreme redness of the mucous membrane of the

intestines, enlarged and tuberculous mesenteric glands, fatty liver, tubercles or adherent peritoneum, tuberculous spleen, liver, kidneys, and renal capsules, waxy appearance of liver, tumors of the uterus, cancer of that organ, carcinomatous mass in the abdomen osseous matter in the mesentery, and ulceration of the cartilages of the knee-joint. Among the children there were also hæmoptysis, hooping-cough, measles, diarrhœa, and convulsions. Hæmoptysis, dropsy, paralysis, convulsions, and delirium, also occurred among the adults. *Medical Times*, June 29th, 1844.

27. *Necrology.*—Geoffrey St. Hilaire, the distinguished naturalist and philosopher, member of the Academy of Sciences, of the Academy of Medicine, and of the Egyptian Institute, Professor of the Faculty of Sciences, etc., is no more. His interment took place on the 22d of July, at the Cemetery of Père La Chaise; and it was done in that imposing manner, with which France alone knows how to honor her scientific men. The chief mourner was the distinguished son. The pall was supported by Baron Dupin, President of the Academy of Science, by Dr. Ferrus, the President of the Academy of Medicine, and by M. Chevreul, the Director of the Museum of Natural History. Among the members of the Institute, who were present, were Messrs. Arago, Elie de Beaumont, Ballanche, Conchy, David (d'Angers), Flourens, Victor Hugo, Jomard, Poncelet, etc. There were also in attendance the Professors at the Garden of Plants, a Deputation of the *Ecole Normale*, and many other distinguished *savants*, foreign and national. Having reached the cemetery, the workmen attached to the garden, unharnessed the hearse, and carried on their shoulders the remains of one they loved to his last abode. Speeches were now made by Messrs. Chevreul, Dumeril, Dumas, Serres, Pariset, Quinet, and Lakanat.

Dr. Hope, who has filled the chair of Chemistry in the University of Edinburgh with so much distinction, died on the 13th of June; and the vacancy thus created has been supplied by Dr. William Gregory of the University of Aberdeen.

28. *Antagonism of Pulmonary Phthisis and of Intermittent Fever.*—At the scientific congress of Lucca this subject was warmly discussed, without any satisfactory result having been arrived at. Dr. Salvagnoli presented a series of cases, accompanied by a statistical table, tending to show that in the Maremmi district of Tuscany, where intermittent fevers are very numerous, pulmonary phthisis and scrofula is but rarely met with. This pathological fact he endeavors to explain in the following manner:—If we admit (says he) a physiological antagonism between the liver and the lungs, which most physiologists do, it is easy to understand why phthisis should be rare where intermittent fever is common. Malaria acts principally on the abdominal viscera, increasing their action and volume. This increase of abdominal vitality diminishes the vital activity of the lungs, and thus prevents the development of tubercles in their tissue.

Dr. Renzi criticized Dr. Salvagnoli's statistical table, and remarked that in marshy districts the number of individuals who arrive at a favorable age for the development of pulmonary phthisis is relatively smaller than in more favored localities, and that consequently a calculation established only on the number of deaths from phthisis in such localities could not be exact. If the generations disappear during childhood,—if the medium age, which in towns is thirty years, is infinitely less in marshy districts, it becomes evident that more persons will die from the inflammatory diseases of early life, and fewer from chronic affections.

Dr. Griffa confirmed the observations of Dr. Salvagnoli respecting the rarity of phthisis in the Maremmi. Dr. Rino, on the contrary, maintained, from observations made at the Clinique of Pisa, that phthisis was common in marshy countries. These views were also supported by Dr. Turchetti, who asserted that in the marshy districts of Fucecchio and Bientina he had remarked the antagonism, which was described by Dr. Salvagnoli as existing in the Maremmi. Dr. Trompeo stated that he had great opportunities for observation in many localities in Piedmont, where malaria was kept up by the rice-grounds, and in Sardinia, where intermittents are extremely frequent and severe; and that in both these countries he had found phthisis very rare wherever intermittent fever was common.—*Bulletin of Medical Science*, August, 1844.

2.

American Medical Intelligence.

Boylston Medical Prize Questions.—The Boylston Medical Committee, appointed by the Corporation of Harvard University, consists of the following Physicians:

JOHN C. WARREN, M. D. GEORGE HAYWARD, M. D. EDWARD REYNOLDS, M. D.
GEO. C. SHATTUCK, M. D. ENOCH HALE, M. D. OLIVER W. HOLMES, M. D.
WALTER CHANNING, M. D. JOHN WARE, M. D.

At the Annual Meeting of the Committee, August 2d, 1844, a premium of fifty dollars, or a Gold Medal of that value, was awarded to SAMUEL FORRY, M. D., of New York, for the best dissertation on the following questions:

"To what extent is the human system protected from Small-pox by inoculation with the Cow-pox: is the protection increased by re-vaccination, and if so, under what circumstances?"

The other Boylston Premium, of the same value, was awarded to HENRY J. BIGELOW, M. D., of Boston, for the best dissertation on the following subject:

In what cases, and to what extent, is the division of muscles, tendons, or other parts, proper for the relief of deformity or lameness?"

The questions for 1845 are—

1st. Is Puerperal Fever ever contagious, and has it any connection with epidemic Erysipelas in its origin or mode of propagation?

2d. The influence of Climate on Longevity.

Dissertations on these subjects must be transmitted, post-paid, to JOHN C. WARREN, M. D., Boston, on or before the first Wednesday in April, 1845.

The following questions are proposed for 1846:

1st. The use of Water for the prevention and cure of disease.

2d. The nature and treatment of diseases of the Rectum.

Dissertations on these subjects must be transmitted as above, on or before the first Wednesday of April, 1846.

The author of the best dissertation on either of the above questions, will be entitled to a premium of sixty dollars, or a gold medal, at his option.

Each dissertation must be accompanied by a sealed packet, on which shall be written some device or sentence, and within shall be enclosed the author's name and residence. The same device or sentence is to be written on the dissertation to which the packet is attached.

All unsuccessful dissertations are deposited with the Secretary, from whom they may be obtained, with the sealed packet unopened, if called for within one year after they have been received.

By an order adopted in 1826, the Secretary was directed to publish annually the following votes, viz:

1st. That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which the premiums may be adjudged.

2d. That in case of the publication of a successful dissertation, the author be considered as bound to print the above vote in connection therewith.

Boston, Aug. 3, 1844. OLIVER W. HOLMES, *Sec'y.*

Weber's Anatomical Atlas.—Although the first number of this work has not yet been issued, yet fully one-third of it is now completed. Mr. Endicott, the undertaker of this great enterprise, is determined to render

it worthy of his reputation as an artist; and as regards the execution of the plates now finished, we are warranted in pronouncing them far superior to the original. The first number will be issued very soon, and its successors will follow, punctually, at the intervals stated in the prospectus. We are the more particular in mentioning this fact, as some persons, from past experience, might be deterred from subscribing, under the fear that the work, after the issue of one or two numbers, might, if not extensively patronized, be discontinued.

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Velpeau's Surgery, translated by Dr. P. S. Townsend, with Notes by Prof. Valentine Mott.—The first volume of this work, which has excited the highest expectations, is on the eve of publication, as it will very probably appear simultaneously with this number of the Journal. From a slight examination of the pages, as they passed through the press, we were highly gratified with the labors bestowed on them both by the translator and by Prof. Mott. We are warranted in the belief, that the work will prove highly honorable to all parties concerned.

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Venerableness of the Boston Medical and Surgical Journal.—We, who have scarcely yet emerged from our editorial swaddling-bands, cannot but feel the respect due to the dignified age of our Boston brother, who has just entered upon the *thirty-first* volume of his periodical. May he live long enough to be enabled to usher into existence a progeny ten-fold more numerous.

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An Error corrected relative to the Pennsylvania Hospital.

Mr. Editor:—In Dr. Lee's paper on Dietaries, published in the May number of the Journal at page 359, his comparative statement between this institution and the New-York Hospital, gives the latter the credit of furnishing its patients with "a much more liberal allowance of milk than the former;" and that, "while the Philadelphians have allowed their 886 patients but $4,50 worth of *beer and cider, no wine, brandy or other liquors*, the more generous New-Yorkers have dealt out 297 dozen of porter (3,564 bottles), and $158,30 worth of wines and liquors," &c.

In regard to the article of milk the Doctor's error is quite excusable, inasmuch as the "Annual Report" only states the quantity *purchased*, and omits the important fact that we keep 8 *fine cows* which are fed and tended in the best manner, and yield at the lowest calculation 50 quarts of milk per day, which added to 864 quarts purchased, make 19,114 per annum, or an average of 21½ quarts to each patient treated during the year, while the average in the New York Hospital is only 15.

The error respecting porter, wines and liquors, is another affair. Had the Doctor examined critically the "Annual Report," he would have found the following items, under the head of "Medical Department," viz. "Wine 45½ gallons $65,06, spirits" (which includes brandy, gin, &c.) "30 gallons $38,50, porter $135,78" (1860 bottles): the comparison therefore would stand thus

Porter	New York Hospital	an average of	1·7	bottle	for	each patient.
	Pennsylvania	do	2·1	do	do	do
Wines & Liquors	New York Hospital	do	7·54	cts.	do	do
	Pennsylvania	do	11·68	do	do	do

Hence it would seem that even those patients who are not "teetotalers," had they their choice to make, might be induced to give us a fair proportion of their custom.

Respectfully yours,

W. R. Clapp, Clerk and Librarian.

Pennsylvania Hospital, 7 mo. 12, 1844.

Leprosy, Greek Elephantiasis, or something else, prevailing in the Province of New-Brunswick, near the Bay Chaleur.—We are indebted to Dr. Wotherspoon, of the United States Army, for two newspapers containing an account of this terror-inspiring disorder. As the Doctor is stationed at Fort Kent, Maine, which is 200 miles from the scene of terror, he is unable to speak from personal knowledge; and the columns of a newspaper are not often redolent with medical philosophy. The rumors that are afloat, exaggerated by fear and terror, we need not relate. The Legislature of the Province has thought the matter of sufficient importance to send a medical committee to the "infected district" to investigate the cause and nature of this *nova pestis;* and, as was to have been expected, the *medicos* came back divided in opinion. By one party, it was contended that the disease is highly contagious—the *tuberculous leprosy of the middle ages;* while the other side alleged, that it is a non-contagious scrofulous affection, being the result of the combined agency of bad diet and vicious habits.

The following are the accounts contained in the two papers:

"Disease at Tracadie and Neguac.—In compliance with the instructions from the Lieutenant Governor, a Commission, consisting of Drs. Key, Skene, Toldarvy, and Gordon, and the Rev. Mr. La France, left Chatham on the morning of Thursday last, for the purpose of investigating the nature, origin, and extent of the frightful and loathsome disease, now existing in Neguac, Tracadie, and Tabisintac. They returned on Saturday evening, and from them we gather the following information.

"The disease is the Greek Elephantiasis,—the Leprosy; not the Elephantiasis of the Arabians, but the Leprosy of the middle ages: the Lepre Tuberculeuse of the French, or Tubercular Leprosy, which raged over nearly every district of Europe, from the tenth to the sixteenth century. It is the decided opinion of the gentlemen composing the commission, that the disease is contagious, and so far as they could ascertain, no person in the above districts, who contracted it, is ever cured. It is also their opinion, that it has no affinity to scrofula, and the idea, very prevalent, that it is owing to the poor diet of the French settlers, and their filthy habits generally, is not correct, for they found it existing in some of the cleanest dwellings, and most respectable families. It has spread very rapidly during the last year. They discovered upwards of twenty cases, all of which can be traced up to one source. They have every reason to suppose that there were a still greater number; but not having power to search, and the inhabitants showing a great disposition to withhold information, or to point out the parties laboring under the disease, they could not make so minute an inquiry, as they otherwise would have done, or as they were desirous of doing.

"The Legislature, we perceive, have voted the sum of £500, toward rendering relief to the parties. This may be considered by many persons a large grant, but when it is considered that the only effectual method to prevent the spreading of this most frightful malady, is to congregate all the parties laboring under it, in some building, which must be erected expressly for that purpose, where they must be clothed, fed, and taken care of—when all these things are considered, together with medical attendance and medicine necessary, the amount will rapidly disappear, and in a short period be found totally inadequate to carry out the intentions of the Legislature. We do not know of any other way likely to effect its total extinction.

"The subject is one of paramount importance. The disease is rapidly approaching our more densely populated districts—and is now only twenty-four miles from Chatham. We trust, therefore, the members of the Assembly will not hesitate, on hearing the report of the Commissioners, to enlarge the grant, and not be led away by the opinions of Drs. Earle and Thompson, as to the nature of the disease and its contagious properties. Whatever they decide on doing, ought speedily to be accomplished, for it may, in a short time, be beyond the power of human means to check its progress.

"The gentlemen composing the commission went up the north-west this morning, having ascertained that some cases have broken out there."—*Miramichi Gleaner.*

"*Disease in the County of Gloucester.*—Yesterday the House went into committee on the message of the Lieut. Governor, relative to a disease which at present exists in the above county, of a most disgusting and fatal character, and which, in the opinion of medical persons in that quarter, resembles the leprosy of the 17th century.

"It appeared from the documents which were read, that the disease made its appearance in 1824, since which seven persons have died of this loathsome malady, having lingered from three to five or six years in a most miserable condition; one of whom, who had been enclosed in a log-hut, and who was fed through a hole in the same, having died, as was supposed, insane; and such was the dread of persons, in consequence of the supposed infectious nature of the disease, that, in some cases, the overseers of the poor had to carry the unhappy creatures the supply of food which was necessary to support existence, and for the consumption of which they retained their natural desire and appetite.

"That the disease is infectious would appear from the fact of persons having been attacked with it who had slept with each other; and, in one instance, a young man who had assisted in carrying a coffin containing the corpse of a person who had died with the disorder, and upon whose clothes some of the contents had oozed, subsequently caught the infection and died.

"It appears further, that there are at the present twelve persons laboring under this disease in the county of Gloucester, and there are about the same number of cases on the other side of the line, which separates it from Northumberland; although there are probably other cases which are concealed, as a knowledge that a person has it excludes its victim from society.

"Among the cases enumerated is that of a female who was shipwrecked at Caraquet, on her way to Quebec; and who afterwards returned to Chatham, where the disorder developed itself, and extended to two others of the family in which she resided, and to a child who was intimate there—all of whom died. In fact, the disorder invariably terminates fatally.

"The reading the several documents connected with this subject created a strong sympathy in the House and compassion for the unhappy sufferers. Dr. Thompson, as did Dr. Earle, both gave it as their opinion that the disorder is not the leprosy. The former gave a very lucid account of the effects of the mode of living and the habits of the French people, among whom this disorder has appeared, which are filthy in the extreme, and which not only predisposes their system for the reception of this or any other scrofulous disorder, but renders it more difficult to cure; and he recommended that their habits of life and the food by which nature is sustained should be changed, and that, by education and amusement, the minds of those poor people might become elevated, and brought, with their bodies, into more healthy and vigorous action."

The London Medical Gazette for June 14th, contains a communication from one of this committee, Mr. A. S. Skene, Surgeon of the British Army. Having satisfied himself that the disease is *tubercular leprosy* or the *elephantiasis* of the Greeks, he quotes the definition of it given in Copland's Dictionary of Practical Medicine; and he then reports several of the nineteen cases that fell under his observation, with the view to show its identity with the *lepra tuberculosa*. He thus describes it:

"Dusky-red or livid tubercles, of various sizes, on the face, ears and extremities; thickened or rugous state of the skin, diminution of its sensibility, and falling off of the hair, except that of the scalp; hoarse, nasal, or lost voice; ozæna; ulcerations of the surface, and extreme fœtor."

"The first case of the disease is said to have occurred in 1817, in a married woman, which terminated fatally in 1829. Her husband took the disease three

or four years before her death, and died in 1831. Since then, the disease seems gradually to have extended itself. Only 12 patients have as yet been known to die of the disease, and in the fatal cases reported, death did not take place till six or eight years after the attack. In some cases but one in a family was affected, and in others there were more. Mr. S. supposes it has been communicated by hereditary taint and by contagion, though he thinks it is never likely to become epidemical. No *post-mortem* examinations have been made of those who have died. He knows of nothing peculiar in the climate, or the diet or habits of the people, which could be considered as contributing to the commencement or continuance of the disease. With regard to the treatment, we copy all the remarks made by him.

"This is either active, palliative, sanatory, or preventive. With regard to the two first, the commission did not feel authorized to offer any observation to the Government of New Brunswick; while in respect to the two latter, they unanimously recommended the erection of a lazaretto, strict seclusion of the lepers in this establishment, and legislative sanction for the removal of those patients who, while medical authorities were adjusting their differences, might introduce the seeds of a most loathsome malady into one of the most populous districts (Chatham) of this flourishing colony."

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Health and Fecundity of the Region around Fort Kent, Maine.—These two highly interesting questions, both as regards the United States troops and the French Acadian population, are clearly illustrated by Dr. Wotherspoon, in the following extract from his letter, dated July 1:

"During the last two months not one of the men has been confined to bed by sickness, even for a single day, and the same universal good health seems to prevail in the surrounding country. One is the more inclined to wonder at this, on seeing the crowds of little unvaccinated wretches that swarm around the door of every log hut, half clothed, and but poorly fed on sour black bread and potatoes. Nothing has astonished me so much as the large families that are found among the French inhabitants. Five adjoining married couples have had in all 40 children, of whom, 35 are living. A man immediately opposite, on the other side of the St. John, has 27 by two wives, the second of whom bore 14. Lareut Ferriaud, at Green River, has had 25 children by one wife—no abortions. Buonaventure Le Crog had 19 children in 18 years; and of these, 5 pair were twins. Pierre Richou has had 6 in 3 years, 3 pair twins; all now living at Shattaquoi, six miles below the fort. Mr. Webber, the present State Commissioner, mentioned that in one house he found a woman with 5 children under 3½ years, one twin and one triplet birth She was then a third time pregnant, her husband confidently expecting soon to be presented with another pair of the 'pretty prattlers.' I have had several females to apply for advice for a prolapsus uteri and leucorrhœa, induced by too rapid child-bearing, and by the habit which all the women around here have, of rising from the bed the second or third day, in order to attend to their accustomed household duties. Day before yesterday, a pretty little French woman consulted me on this account; on inquiry, I found that she had had five children in six years. I think that 'Ould Ireland' can hardly hold a candle to the Madawaski plantation in either the production of children or potatoes."

This law of extraordinary fecundity and of equally remarkable health, is not, however, in conformity to the law developed by statistics, which shows that the ratios of births and of deaths bear a direct relation.

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Laws of New York relative to the Practice of Physic and Surgery.—As this is a subject of universal professional interest, and as we regard the report made at a special meeting of the Albany County Medical Society, on the 25th June last, to be characterized by views expressive of a proper

and manly exposition of the real position of the profession relative to this question, and especially as the argument and facts are presented with a force and clearness highly creditable to the author of the report, we are induced, notwithstanding its length, to give it entire.

As all restrictions on the practice of medicine, in this State, are now removed by legislative enactment, it follows that the homeopath, the Thompsonian, the natural bone-setter, and the seventh son of a seventh son, all occupy the same legal equality with the graduated physician of the institutions endowed by our legislatures.

It is just as impossible to elevate in public estimation, by means of legal enactments, a body of unworthy men, as it is to depress a class of superior ones by the same mode; and hence, we see how much depends on each individual—how imperiously it is required of him to cultivate his mind assiduously; for, unless he maintains the level of the best educated classes, the dignity of the professional man is lost in the character of the tradesman, thus dragging down, so far as one individual can do it, the professional reputation of the whole body.

"The committee appointed at the last meeting of the Society to report as to the manner in which the law of last winter bears on the statutes regulating the practice of Physic and Surgery heretofore existing in this State, and how it affects the organization of the State and County Societies, and as to the course which it will be expedient for the society to pursue under the circumstances, reports as follows:—

"For the purpose of laying the whole subject before the Society, in an intelligible form, we present the following summary of the laws regulating the Practice of Medicine as they existed in this State previous to May 6, 1844.

"County and State Medical Societies were incorporated, and the terms of Admission into the County Society were prescribed by law.

"Members of the County Societies were the only licensed practitioners of Physic and Surgery.

"All unlicensed persons, except 'Botanic doctors,' were prohibited from practising under penalty of $25 for each offence. All unlicensed persons, without exception, were made incapable of enforcing by legal process the payment of compensation for services rendered to the sick.

"By the act of May 6, 1844, all unlicensed persons are freed from the penalty for practising, and the disability of collecting pay for their services. Besides this they are made liable to civil and criminal prosecutions for mal-practice, gross ignorance and immoral conduct.

"Previous to the passage of this act the law prescribed the mode of becoming a licensed practitioner of Medicine, and conferred on such, and on the Botanic doctors, the exclusive right to practice. Since the passage of this act, the law still prescribes the mode of becoming a licensed practitioner, but gives to all persons of whatever age or sex, or education, the right to practise, and to enforce the payment of compensation for their services.

"Hence, although the organization of the County and State Societies is left as before, it is no longer obligatory on those who practise Physic and Surgery to become members of the County Societies, nor to go through the course of study and the examination requisite for admission into those Societies. They have become voluntary associations, which give to their members the title of licensed practitioners, but confer on them no legal rights.

"Such is the operation of this act on the laws regulating Medical Practice.—To remove any doubts concerning its true construction, we affix to this report a letter from the Attorney-General, prepared in answer to a request from one of the Committee.

"We now proceed to the examination of the question, whether the passage of this act calls for any movement on the part of the Society. But first of all, it

will be necessary to review the course of legislation in regard to Medical Practice, and to establish the principles on which such legislation ought to be founded.

"Seeing what important duties devolve upon the Physician, what weighty interests are confided to his skill and integrity, subject to no control but his own conscience, legislators have always recognized the propriety and necessity of providing men to assume those duties who could offer some guarantees of capacity and honesty, and of guarding the public against imposition by the ignorant and unprincipled. Hence laws have been enacted, having in view the two-fold object of raising up and organizing a body of competent Physicians, and of protecting the public against imposition.

"To accomplish the former of these objects, the profession has been organized by the establishment of County Societies, so that its members may readily be recognized by each other and by the public, may exercise a general supervision over each other, and co-operate to promote the common welfare.

"Provision has been made for Medical education by the establishment of schools liberally endowed, in which students may, at moderate expense, be taught the science and art of Medicine. A course of study has been prescribed through which candidates are required to pass before they can be admitted to an examination by which their qualifications are to be tested. After having accomplished this course of study and passed the examination, the student is admitted into the profession as one worthy of its honors and fitted to assume its duties.

"Thus are attained the first great objects of medical legislation. A body of physicians is created, presenting certain guarantees of capacity and character, and this body is organized so that its members may be readily recognized by the public. These objects and the means by which they are attained we all unite in commending.

"If any person, with these means of choosing, applies for medical aid to one who can offer no guarantees of proper qualifications, he is guilty of a gross imprudence; but it is at his own risk, and he has to suffer in his own person all the consequences. The law has protected him against imposition, but not against a foolish choice.

"It might be supposed, that when men have the choice before them of educated physicians, presenting evidence of their qualifications, and of others whose main titles seem to be their ignorance and impudence, they would not hesitate to have recourse to the former. But sad experience shows that this is far from being true. We find that men who conduct all their other affairs with prudence and discretion, are willing to abandon a medical attendant of tried skill and character, for any juggling mountebank whose pretensions would only excite a smile, were it not for the deplorable results to which they give rise.

"Struck with this sad spectacle of human credulity and folly in cases in which such important interests are involved, legislators have thought that it was not sufficient to provide educated physicians, and to give the public the means of recognizing them, but have passed laws prohibiting all but regular physicians from practising. These laws are founded on the assumption, that it would be so absurd to have recourse for medical aid to an ignorant person, when it is possible to procure the services of an educated physician, that those, who might be tempted to do so, must be treated as incompetent to manage their own concerns. To prevent them, therefore, from indulging in such folly, all irregular practice is prohibited under certain penalties.

"The laws for educating and organizing a body of physicians were intended to give men the means of acting prudently; the prohibitory laws were intended to compel men to act prudently.

"So long as public sentiment accords with this view of the legislator, the operation of these prohibitory laws is salutary; while only a few silly persons prefer to have recourse to men out of the profession for relief, it seems proper to protect them against their own bad judgment, just as minors and imbecile persons are not allowed to make contracts by which they might be swindled by knaves. But unfortunately a large portion of the public think that education and science are not necessary to qualify men for medical practice. Numerous sects have sprung up, pretending to cure diseases by various processes, more or less ridiculous, but all agreeing in this one point, that it is not necessary to pass through

the regular course of studies required by law, but that there is a royal road to medical practice which renders such drudgery useless. These sects, absurd as their doctrines may be, have succeeded in gaining followers among the public, and the effect of these restrictive laws, if enforced, must be to prevent all their followers from procuring the kind of medical aid which they prefer. Besides, it must be remarked that those who are thus placed under Legislative tutelage, are not exclusively the ignorant or imbecile, but that they number in their ranks many persons of education and sagacity who manage all their other affairs with sufficient acuteness and discernment.

"However absurd the opinions and conduct of these men may appear to us, we have not, for that reason, the right to impose on them our ideas of wisdom. If, for example, a full grown man who is capable of managing his own business, chooses to call in, to reduce a dislocation, a natural bone-setter who avows that he has never seen a skeleton, in preference to a surgeon who has devoted himself to the study of such accidents, we may deplore his folly, and endeavor to persuade him to act more prudently, but we ought not to use compulsion either directly or indirectly. If his conduct is foolish, he alone suffers from it, and as we are not responsible for his folly, we have no right to prevent him from indulging in it.

"On this point we have the misfortune to differ with some for whose opinions we have great respect, and we wish to be well understood. None can be more deeply impressed than we are with the immense amount of mischief inflicted on the community by irregular practitioners of medicine. We feel indignant at the base deception they daily practise under our eyes, and we pity their dupes. We all alike agree in deploring the evil, but there is some difference of opinion as to the remedy. The experience of the past satisfies us that Legislative wisdom never can restrain individual folly; that all that legislation can do in such matters is to give all the means of knowing the character of those to whom they may apply, and thus enable them to act with a full knowledge of the circumstances, and leave the rest to each man's own wisdom and prudence.

"We are accustomed to apply this principle to other cases of a like nature. Absurd and mischievous religious systems sometimes spring up. We are pained to see men led away by vile superstitions, or fall victims to the arts of designing leaders, yet we do not attempt to put down such systems by law, because we do not think it right to impose our religious views upon others, and because we know that any such attempt would only serve to confirm them in error. So too in matters of ordinary business, the law protects men against imposition so far that if one, in making a bargain, is deceived by false representations, the law would give him redress; but if, with a full knowledge of the facts, one enters into a foolish bargain, he must abide by the consequences. There is no reason why the same principle should not be applied to medical practice.

"But even admitting that these restrictive laws are founded on principles of sound policy and justice, there is still one objection which is unanswerable. It is entirely impossible in this country to enforce them. For many years they have been in existence, and yet men have practised under our eyes, openly and avowedly in violation of them, and in no one instance has the penalty been enforced. As to the disability of recovering payment for their services by legal process, it has had quite as little influence, for we think it is altogether probable that botanic doctors and homeopaths and other quacks have been quite as well paid as the regular practitioners.

"The practical operation of these laws was rather favorable to the class of irregular practitioners. The penalty they imposed was never regarded; the disability of collecting debts afforded a pretext for demanding payment in advance, and gave to their demand the character of debts of honor. Besides this, they put it in the power of the quacks to raise a cry of persecution, and represent the regular profession as greedy monopolists, and thus excite some feeling in their favor among weak and credulous people. A clamor for the repeal of these laws was kept up for the purpose of advertising the system, rather than of obtaining any rights about which they really cared; and since the repeal has been obtained, they will have to devise some new plan to wriggle themselves into notice.

"It will be remarked, that in all our reasoning on this subject of these restrictive laws, we have considered them as designed for the good of the public and not of the profession. This is undoubtedly the only ground on which they can be defended. The object of those who enacted them, was to protect the public against the ignorance and rapacity of quacks, and not to protect the profession in a monopoly of practice to be enjoyed for the benefit of its members. If, in the repeal of these laws a wrong was committed, the public and not the profession must be considered the injured party.

"It behoves us neither to claim as a right nor to ask as a favor any exclusive privilege, which is opposed to, or which is not directly conducive to, the public good. If these restrictive laws are not called for from considerations of public safety, then there should be no opposition on our part to that repeal. It is certain, that no class of the community are so little liable to be injured by quacks as physicians who know how to avoid them.

"This point has been lost sight of in the discussions on the subject in the legislature and elsewhere, and we are anxious to bring it clearly in view, because it does not comport with the dignity of our profession to appear to be engaged in a selfish contest for privilege with the different bodies of quacks which infest the community.

"As the natural guardians of the public interests in such matters, it is incumbent on us to admonish the legislature, if we think they are acting ignorantly or rashly; but we must be careful to have it understood that in so doing, we are not defending our privileges against the rest of the public, but that we are defending the public against their own rashness and folly.

"To resume. We consider that the great end of legislation in medical practice should be to provide a body of competent physicians and to give the public the means of recognizing them, leaving to the prudence of individuals to choose discreetly; and that all attempts to coerce people to discretion are wrong in principle and unsuccessful in practice.

"We are now prepared to examine the question, whether, under the circumstances, any action of the Society is called for?

"We have expressed our view as regards the restrictive laws. Whatever difference of opinion may exist as regards the general policy of such laws, there is one point on which all must agree. It is utterly impossible to enforce them so long as they are not in accordance with public sentiment. We would therefore be exceedingly sorry to see the profession again entering into a contest with Thomsonians and other persons of that class, for the sake of restoring a law which we know beforehand cannot be executed, and which serves as a pretext for quacks of all kinds to raise a cry of persecution, and to represent the profession as made up of selfish monopolists—a contest in which defeat would be mortifying, and success would bring no real advantage.

"We are aware that much feeling has been excited in the profession by the repeal of the laws, but this is owing rather to the manner in which it was effected and the ground on which it was urged, than to the act itself. Although it was sustained by some proper reasons, yet a few senseless demagogues in the legislature, fit organs of the Quacks, whose cause they espoused, did not fail to seize that occasion to revile the whole body of Physicians, and to represent them as engaged in a struggle to maintain a monopoly of practice in their own hands. The profession was thus placed in a false position; it appeared to be fighting for its privileges against the Quacks; the interest of the public in the contest was kept out of view, and the result was hailed as a triumph of Quackery over the Medical profession.

"We hope that in future they will be allowed to enjoy their triumph without any interference on our part. We should be sorry to become engaged in a contest with ignoble adversaries for the benefit of a public which will always look upon our mediation with suspicion. Let the knaves and the dupes in future settle their accounts among themselves.

"As regards the laws regulating medical education and the organization of the profession, we do not know of any modification which would be desirable. The State and County Societies have all the powers necessary to enable the profession

to act with unity and efficiency. What is still wanting here depends not on the legislature, but on ourselves. We ought to endeavor to infuse more spirit into our county societies, to have more frequent meetings, and to promote cordiality of feeling among the members. The rules of medical ethics should be scrupulously observed, and any violation of them promptly noticed by the Society.

"In the law of last winter an amendment was offered requiring unlicensed practitioners to express their true character by having the word "unlicensed" on their signs. This amendment, to which no sound objection could be made, since it could only serve to inform the public of the true character of those who offered their services, and which, if one-half was true of what was said in debate respecting the superiority of Indian doctors and homeopaths and steam doctors over the regular profession, would have conferred a real advantage on the unlicensed practitioners, was rejected. Although we think the amendment a good one, yet we should be sorry to go again before the Legislature to ask for its passage; and we think the same end might be attained if every County Society would publish in the newspapers semi-annual or quarterly lists of their members.

"Now that all restrictions on practice are removed, it will be practicable to raise the standard of admission into the County Societies without exciting any well-founded opposition. These societies are now voluntary associations, into which those who find the requirements too high need not enter. A well-matured plan, which would increase the amount of requisitions without putting it at a point unattainable at the present time, would, no doubt, be favorably received by the profession.

"We would, then, say, in conclusion, we have laws enough and good laws. Quackery must be suppressed not by legislation, but by enlightening the public as to its dangers. The dignity and respectability of our profession is to be promoted not by asking for legal privileges, but by an increase of individual zeal and a more cordial co-operation. It is a great error to suppose that the repeal of the restrictive laws puts the physician on a level with the quack and takes away the barrier which separated them. The barrier which effectually separates the two classes is formed by the higher attainments and honorable deportment of the members of the former, and this is the barrier which it depends on us to make higher and stronger. It is one which quackery will not surmount, and which no legislative enactment can break down.

"In accordance with these views, the committee offer the following resolution:—

"*Resolved*,—That in the opinion of this Society, it would not be conducive to the interest or respectability of the medical profession, at the present time, to apply to the Legislature for any alteration in the charters of the State or County Medical Societies; or any legislation on medical subjects whatever.

"THOMAS HUN,
"JOEL A. WING,
"MASON F. COGSWELL."

"The preceding report and resolution were unanimously adopted by the Society.

"STATE OF N. Y., *Attorney General's Office*,
Albany, June 12, 1844.

"JOEL WING, M. D.

"Dear Sir—In compliance with your request of this morning, I have examined the act entitled "An Act in relation to the practice of physic and surgery," passed May the 6th, 1844, for the purpose of ascertaining how far previous existing acts in relation to the same subject have been modified or affected thereby.

"By the 1st section of this act, § 22 of Art. 14, Tit. 7, part 1 of the Revised Statutes, which incapacitates persons not licensed according to law from enforcing by law the collection of any debt, arising from such practice, is expressly repealed: and all laws then existing inhibiting the collection of debts, by any person, whether licensed or not, for services rendered in the practice of physic and surgery, are swept from the Statute Book.

"The 2d and 3d sections of the same act repeal all existing laws, imposing any criminal prosecution or penalty for the practice of physic or surgery, without a license.

"The 4th section of the act subjects the unlicensed practitioner to the same civil liabilities for mal-practice as if he were a licensed physician.

"The 5th section provides that every person not being licensed, who shall practise or profess to practise physic or surgery, or who shall prescribe medicines or specifics for the sick, shall be deemed guilty of a misdemeanor, who, in any court having cognizance thereof, shall be convicted of gross ignorance, mal-practice, or immoral conduct.

"I have examined with much care the different acts regulating the practice of physic and surgery, including the provisions contained in the Revised Statutes, up to the present time. And I do not discover that the act under consideration, either expressly or by implication, modifies or repeals them in any other particular than as above stated. It simply cuts off all restraint to the practice of physic and surgery, by any person who will choose so to do, subjecting such persons to civil liabilities for mal-practice, and to a criminal prosecution for gross ignorance, mal-practice, or immoral conduct, at the same time giving power to such person to enforce by law payment for his services—leaving all other statutory provisions, not inconsistent with those modifications, untouched. All the provisions, therefore, regulating the practice of physic and surgery among licensed physicians, are still in force, although they may perhaps prove quite inefficient from the consideration that the great inducement to become so, may have been taken away by this act.

"With friendly consideration, your obedient servant,

"GEORGE P. BARKER."

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Dr. Valentine Mott and our Review of Pancoast's Operative Surgery. —*The Medical Examiner.*—In the extended and very favorable notice of Pancoast's Surgery, in our last No., it would appear that justice was not done on every side. It is scarcely necessary for us to say, that we give place to the following communication from Prof. Valentine Mott relative to certain operations on the lower jaw, with much pleasure:

New York, August 20, 1844.

"MY DEAR DOCTOR—I observed an error in the review of Pancoast's Surgery, published in the last number of your Journal, which I know you will take pleasure in correcting.

"It is in relation to the operation upon the LOWER JAW. I claim for myself and my country, the first operation for Osteo-Sarcoma. It was original with me, as I never read or heard of anything of the kind in any country.

"You will find in the American Journal of the Medical Sciences an account of my first case, with a plate, some twenty or twenty-five years since. It was successful.

"Since that period I have performed many of them in various proportions.—Twice I have removed the disease on one side at the temporo-maxillary articulation.

"Since which date, many surgeons of our country and of Europe, have performed these operations.

"Very respectfully yours,

"VALENTINE MOTT."

"DR. SAMUEL FORRY."

As the opportunity thus presents itself, we will add, that a different sort of accusation has been made against us relative to this same review. Ay, kind reader, we have been verily accused of showing partiality to a Philadelphia author! It is said that we have spoken, in very favorable terms, of a book, the great mass of whose text has been drawn bodily

from Velpeau, Malgaigne, and especially Bourgery; and that from the last, nineteen-twentieths of the lithographic illustrations have been taken!

What will the "*independent*" editor of the "Medical Examiner," now, think of our justice toward Philadelphia authors? By the way, we are truly sorry to see the Editor of that Journal work himself into such a passion, during the muggy dog-days, in consequence of some strictures of ours. He ought to bear in mind that he loses no opportunity, which his journal allows him every fortnight, to discharge his pop-gun at us, while we, as we have but a single opportunity in every two months, must employ a big gun—a Paixhan—"a peace-maker." If the shot produces havoc, the enemy ought to bear it patiently, conscious that he seizes upon every little contemptible object in the hope of annoying us. Witness, for example, the *speaking automaton!*

It was a pitiful subterfuge of his, to say that he could not reply to our remarks on account of the language used, when part of that very language was his own! We did hope that he would explain why it is, that the work of M. Chailly, which has been highly approved of throughout France, England, and this country, save Philadelphia, should have encountered opposition in his journal alone. His only explanation is, that he is "*independent.*" Others would call it by a very different name.

"Independent," forsooth! Look at the present number of this Journal, at our notice of "Human Health, &c.," and contrast it with the notice of the same work in the "Examiner." We thus have a definition of this word "independence," which means—*giving praise invariably to all that is written by a brother professor, and the contrary to whatever comes from New York.*

We have from a reliable source the cause of the Examiner's special opposition to us, which, as we always suspected, finds its promptings in the mortified vanity of a *certain* professor.

Postage on Medical Journals.—It is of the utmost importance to the profession, and indeed to the whole community, that every facility should be afforded for the diffusion of medical, agricultural, and scientific intelligence. To accomplish this, medical men, agriculturists, and others, should unite to induce Congress to reduce the postage on such periodicals to the same rate as that on newspapers.—*Philadelphia Medical News.*

Seeing the unjust and unreasonable difference made by law between periodical and newspaper postage, we highly approve of this proposition; and as a word of caution to the General Post Office, we would add that, unless the proper remedy is soon afforded, not only will letters, as is now the case, but newspapers and periodicals, be transported, on all the great routes at least, through private channels of communication.

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ART. XVI.—Thoughts on Quarantine and other Sanatory Systems, being an Essay which received the Prize of the Boylston Medical Committee of Harvard University, in August, 1834. By CHARLES CALDWELL, M.D. [Veritas atque utilitas antiquitati præponendæ sunt.] Boston: Marsh, Copen & Lyon. 1841.

Thoughts on Moral Medicine, being an Introductory Lecture. By CHARLES CALDWELL, M.D. Delivered November 4, 1834.

Thoughts on Hygiène, as applicable to Hot Climates, more especially to the Mississippi Region, and to New Orleans. An Introductory Lecture, delivered November 8, 1836. By CHARLES CALDWELL, M.D., . . 385

ART. XVII.—A Manual of Chemistry, containing a condensed View of the present State of the Science, with copious References to more extensive Treatises, original Papers, &c. Intended as a Text-Book for Medical Schools, Colleges, and Academies. By LEWIS C. BECK, M.D., Professor of Chemistry in Rutger's College, New Jersey, and in the Albany Medical College. Fourth edition, revised and illustrated with numerous Wood Cuts. New York: W. E. Dean, 1844, pp. 480, . 386

ART. XVIII.—Anatomical Atlas, illustrative of the Structure of the Human Body, by HENRY H. SMITH, M.D. Parts IV. and V. 386

ART. XIX.—The Medical Student, or Aids to the Study of Medicine. A revised and modified edition. By ROBERT DUNGLISON, M.D., Professor of the Institutes of Med., etc. Phil.: LEA & BLANCHARD, pp. 311, . 386

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ART. XXI.—Medicines, their Uses and Modes of Administration, including a complete Conspectus of the three British Pharmacopœias, an Account of all New Remedies, and an Appendix of Formulæ. By J. MOORE NELIGAN, M.D., Physician to Jervis-street Hospital, and Lecturer on Materia Medica, etc. With Notes and Additions, conforming to the Pharmacopœia of the United States, and including all that is new or important in recent improvements. By DAVID MEREDITH REESE, A.M., M.D., late Professor of the Institute of Medicine and Surgery in the Washington University of Baltimore, etc. New York: Harper & Brothers. 8vo. pp. 453, ... 387

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ART. XXII.—Philosophy of General Principles, an Introductory Lecture, delivered before the Medical Class of the Berkshire Medical Institution, Aug. 1, 1844. By H. H. CHILDS. pp. 22, ... 388

ART. XXIII.—An Essay on the Philosophy of Medical Science. By ELISHA BARTLETT, M.D., Professor of the Theory and Practice of Medicine in the University of Maryland. October. pp. 310. Phila.; Lea & Blanchard. 1844, ... 388

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TO READERS, CORRESPONDENTS, ETC.

Since our last issue, it is known to several professional friends, that Dr. Forry has been prevented attending to his editorial duties, in consequence of severe and protracted illness, which has, indeed, for some two or three weeks rendered his life extremely precarious. It is with unfeigned regret that we have to state his continued indisposition. The present number of the New York Journal of Medicine has consequently been consigned to the care of a gentleman who has kindly undertaken its supervision.

Communications have been received from Dr. G. O. Jarvis, of Portland, and Dr. Th. A. Tellkampf.

We have to acknowledge the receipt of the following works:

Clyclopœdia of Practical Medicine, Parts XI., XII., XIII., XIV., XV. (From the publishers.)

Annual Catalogue of the Medical Institution of Geneva College.

The Medical Student; or, Aids to the Study of Medicine. By Robley Dunglison, M.D. Philad.: Lea & Blanchard. (From the publishers.)

Medicines and their Uses. By J. Moore Neligan, M.D. Edited by David Meredith Reese, M.D. New York: Harper & Brothers. (From the publishers.)

Supplementary Report on the Sanatory Condition of the Laboring Population of Great Britain. London: Clowes & Son. (From A. Boardman, Esq.)

A Manual of Chemistry. By Lewis C. Beck, M.D. New York: W. E. Dean. (From the publishers.)

Natural History, Pathology, and Treatment of the Epidemic Fever prevailing at Edinburgh. By John Rose Cormack, M.D. London: J. Churchill.

Principles of Pathology and Practice of Medicine. By John Mackintosh, M.D. Fourth American edition. By S. G. Morton, M.D. Philad.: Lindsay & Blakiston. (From the publishers.)

Anatomical Atlas. By H. H. Smith, M.D. Parts IV. and V. Phila. (From the publishers.)

Elements of Comparative Anatomy. By Rudolph Wagner, M.D. New York. J. S. Redfield. (From the publisher.)

Medical Communications from the Mass. Med. Soc. Vol. III. (From Dr. Homans.)

Enchiridion Medicum; or, the Practice of Medicine; the result of fifty years' experience. By C. W. Hufeland, Counsellor of State, &c. New York: Wm. Radde. (From the publisher.)

A Treatise on Pathological Anatomy. By Carl Rokitanski, M.D. Translated from the German, by Dr. John C. Peters. New York: Wm. Radde. (From the publisher.)

Dissertation on the Respect due to the Medical Profession. By Worthington Hooker, M.D. (From the author.)

Thoughts on Quarantine. By Charles Caldwell, M.D.

Thoughts on Moral Medicine. By Charles Caldwell, M.D.

Thoughts on Hygiène. By Charles Caldwell, M.D. (From the author.)

An Essay on the Philosophy of Medical Science. By Elisha Bartlett, M.D. (From the publisher.)

Philosophy of General Principles. By H. H. Childs, M.D. (From the author.)

The following medical journals have been received in exchange :—

The London Medical Gazette.
The British and Foreign Medical Review.
The Dublin Medical Press.
The Provincial Medical and Surgical Journal.
The Boston Medical and Surgical Journal.
The Western Journal of Medicine and Surgery.
The Medical Examiner.
The St. Louis Medical and Surgical Journal.
The Illinois Medical and Surgical Journal.
The Western Lancet.
The American Journal of Insanity.
Silliman's Journal.
Montreal Medical Gazette.

☞ All letters in regard to the *business* department of the Journal, and all remittances of money, should be addressed *exclusively* to the publisher, Henry G. Langley; but books for Review and Communications designed for publication, should be directed, *free of expense*, to Samuel Forry, M.D., Editor of the New York Journal of Medicine, care of Henry G. Langley. Persons at a distance may direct parcels, paid as above, under cover of Barrington & Haswell, Philadelphia, W. D. Ticknor, Boston, and Wiley & Putnam, London.

Postmasters, it will be borne in mind, are authorized by law to frank letters containing money for the subscription of periodicals.